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ABSTRACT

A projective role taking task (RTT) was revised with respect to procedure and scoring categories for use with the mentally retarded. The revised RTT was administered to 123 educables. Results indicated significant associations between mental age and various indices of the retardates' role taking behavior. These associations remained significant when chronological age was controlled. Also, both interjudge agreement and test reliability met levels established in previous studies of intellectually normal individuals. It was concluded, therefore, that the revised RTT was both reliable and valid with the retarded and provided a basis for study of the relationship between role taking ability and behavioral indices of social adequacy. (Author/JD)

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Melvin Feffer

Yeshiva University
55 Fifth Avenue
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Summary

The aims of the present study were 1) the adaptation of a projective role-taking task (RTT) for use with mentally retarded individuals and 2) the evaluation of the revised RTT as to whether or not it met established reliability and validity criteria. These goals were considered as preliminary ones inasmuch as they constituted necessary conditions to be met before studying the relationship between role-taking and social adequacy in the retarded.

On the basis of a number of small pilot studies, the RTT was revised with respect to procedure and scoring categories. The revised RTT was administered to an independent sample of 123 mentally retarded educable males and females, and scored by the principal investigator in accordance with the new scoring categories.

The essential question regarding validity was the following: Does the role-taking performance of the mentally retarded subject follow a developmental pattern which is similar to that of the previously tested normal subject? As in the studies of intellectually normal subjects, mental age was considered as a rough index of cognitive level of development. Accordingly, a positive significant empirical association between level of role-taking and mental age constituted the minimum validity requirement for the revised RTT. Reliability level (interjudge and test reliability) was considered acceptable if it met the levels established in previous studies.

The present results indicated that there were significant associations between mental age and various indices of the retardates' role-taking behavior. This association between mental age and role-taking remained significant when the influence of chronological age was controlled. In addition, both interjudge agreement and test reliability met the levels established in the previous studies of intellectually normal individuals. It was concluded, therefore, that the preliminary goals of the present study were achieved and that the results provided the basis for a future study of the retarded which could focus on the relationship between role-taking ability and behavioral indices of social adequacy.

Statement of Problem

In his early research (Feffer, 1959; Feffer and Gourevitch, 1960), the investigator has focused on the cognitive aspects of role-taking behavior by means of a projective role-taking task (RTT). More recently, this emphasis has shifted to a consideration of the social implications of role-taking (Feffer, 1967; Feffer, in press, Appendix A) and, in particular, to an evaluation of social adequacy as a behavioral correlate of role-taking performance (Feffer and Suchotliff, 1966). One of the difficulties encountered in this past work has been the problem of assessing individual differences in social adequacy among intellectually normal subjects. A number of considerations have suggested that such difficulties in assessment may be present to a lesser degree with the mentally retarded and, accordingly, point to the advantage of studying the relationship between role-taking and social adequacy within this population. However, because the RTT had not been used previously with the mentally retarded, it was first necessary to a) revise the RTT procedure for this population and b) determine whether the revised measure met established reliability and validity criteria. The present study was directed toward these preliminary goals.

Background to Study

The conceptual framework underlying the present study is derived from Piaget's cognitive-developmental approach. Piaget has characterized cognitive development as a reorganization of behavior in which focusing sequentially upon single aspects of the experiential field ("sequential" decentering) becomes subordinated to focusing upon a number of aspects of the field in relation to one another ("relational" decentering). Exemplifying this conception is his classic study (1950) of the child's judgment of quantity in which an invariant amount of liquid is poured successively into containers of different shapes. Piaget attributes the younger child's lack of conservation to his focusing upon one dimension of the situation at a time, e.g., attending first to changes in the height of the liquid while neglecting compensatory changes in the circumference of the container and then shifting attention to circumference while neglecting height. By the same token, he views the older child's attainment of conservation as a function of his ability to coordinate changes along both dimensions, that is, to consider changes in height in relation to changes in circumference.

In general, Piaget has restricted the decentering concept to an interpretation of impersonal cognitive functioning. The investigator's past research, however, has extended the decentering concept to the interpersonal area by means of the RTT. In the RTT, the subject is first

required to tell a standard TAT story to an ambiguous drawing. He is then asked to retell the story from the viewpoint of each of the figures in his story. Decentering level has been measured in terms of the degree to which the subject is able to refocus upon his initial story from the particular perspective of each of his figures while at the same time maintaining continuity between his different versions of the story. Theoretically, then, the conservation of a role relationship by means of coordinating different perspectives is viewed as analogous to the conservation of quantity by means of coordinating changes in height and circumference.

The investigator's early studies were directed toward a construct validation of the RTT in terms of its cognitive-developmental significance. In Feffer (1959), normal male adults were evaluated in their ability to coordinate perspectives on the RTT and on a formal developmental measure of differentiation and integration as evidenced in Rorschach responses. The two indices of developmental level were found to be associated and initial support was inferred for the RTT decentering categories as a basis for evaluating level of cognitive development. In a subsequent study by Feffer and Gourevitch (1960), intellectually normal children (ages 6 through 13) were given the RTT and a number of cognitive tasks used by Piaget and his co-workers in their studies of conservation of quantity and part-whole relations. A developmental ordering of role-taking performance in accordance with RTT decentering criteria showed a predicted progression with chronological (and mental) age and, controlling for the influence of chronological age, predicted relationships with decentering activity on the impersonal Piagetian tasks. These findings, which have been replicated in other studies of intellectually normal children (Wolfe, 1963; Buchsbaum, 1965; Candell, 1965), have been interpreted as providing further and more direct support for the developmental significance of the RTT decentering categories. The original RTT scoring criteria, along with the rationale and procedure have been detailed in Schnall and Feffer, 1966. Information on interjudge and test reliability as well as the influence of verbal intelligence and productivity on RTT scores can be found in Feffer (1959), Feffer and Gourevitch (1960), Candell (1965), Feffer and Jahelka (1968) and Lowenherz and Feffer (1969).

Methods

Pilot studies leading to revised RTT.

The first part of the project was devoted to a number of small pilot studies in which approximately 40 educable, mentally retarded subjects were tested with various forms of the RTT. This pilot testing had a two-fold purpose. The first was to compare different kinds of stimulus material, e.g., three dimensional wedgie figures, TAT cards, etc., in terms of the type of stimulus which elicited the most productive initial story and the greatest degree of differentiation between story characters. The second purpose was to select those instructions and

procedures which could best be understood by mentally retarded subjects over a range of cognitive maturity. The stimulus material and procedure which were selected on the basis of this pilot work are described in Progress Report 11-19-68 (abstract in Appendix B). The revised RTT was then given to an additional sample of 50 mentally retarded educable subjects representing a range of mental and chronological age. The role-taking performance of these subjects was scored in terms of the original Schnall and Feffer scoring criteria. New scoring categories were added as described in Progress Report 2-19-69 (abstract in Appendix C) and, together with the revised stimulus material and procedure, were encorporated in the working manual (Appendix D) used in the present study.

Empirical evaluation of revised RTT.

The revised RTT was administered to an additional, independent sample of 123 mentally retarded educable males and females ranging in chronological age from 6.5 years to 20.0 years and in mental age from 4.4 years to 14.2 years. All subjects were tested while attending special classes in various New Jersey public schools, and were screened for sensory-motor difficulties and emotional disturbance. The assessment of mental age was derived from school records and, in the main, was based on the WISC. All subjects were seen individually in a single testing session during which each was given the RTT by a research assistant who then coded the protocols. Protocols were scored "blind" by the principal investigator in accordance with the revised scoring categories detailed in Appendix D. These are summarized in the following outline of the revised RTT procedure and scoring categories:

RTT procedure. As adapted for retarded subjects, the RTT first requires the individual to make up two stories in response to MAPS stimulus material. After completion of each story, the subject is then asked to retell the story from the viewpoint of each of the characters in the story. The initial story instructions are the following:

"I want you to make up a good story about this scene (show Living room scene). Tell a story with a beginning, middle, and end. Choose three people for your story. (Show array of MAPS figures)

The instructions for the role-taking part of the RTT are the following:

"Now make believe (pretend) that you are the father, mother, etc. and tell the story again as if you are the _____."

RTT scoring categories. Piaget's decentering concept as applied to the RTT suggests that a MAPS figure, as an item of social content, can be described from more than one point of view. The content which the subject has produced in his initial story with respect to each of the MAPS figures is termed an initial entry. When subsequently "taking the role" of a given figure, the content which the subject produces with

respect to that figure is termed a self-entry while the content which he produces with respect to a reciprocal figure is termed an elaboration-entry.

As has been noted, role-taking performance is evaluated in terms of the degree to which the subject is able to refocus upon his initial story from the perspectives of his different figures (role-taking shift) while at the same time maintaining continuity between these various versions of the initial story (role-taking coordination). The following scoring categories are thus ordered along 1) the dimension of increasing shift and 2) degree of coordination at each level of shift.

A. Self-entry categories

1. NR (no role-taking): Content in the self-entry which indicates that the subject essentially has no understanding that there are different viewpoints upon which to focus. Degree of coordination between self-entry and initial entry at this level of role-taking ranges from basic fragmentation and/or global coherence (NR1) to a relative degree of consistency but with some irrelevancy and contradiction (NR2)to rote repetition (NR3).

2. SR (simple role-taking): A shift in focus in accordance with the requirements of the role-taking situation, but one that occupies a middle category between no understanding that different viewpoints are involved and one in which there is a clear understanding of this. Such nascent role-taking is usually manifested in some selection and reorganization which are appropriate to the role of the given figure, e.g., the character as the second figure speaks "dialogue" in responding to what the first figure said in his previous role. Coordination between the self-entry and the initial entry ranges from global coherence and/or fragmentation (SR1), to a relative degree of consistency with some irrelevancy and contradiction (SR2), to essential coherence and continuity (SR3).

3. RT (role-taking): Content in the self-entry which indicates that the subject has a clear understanding that different perspectives are involved in the retelling of the initial story. One indication of this understanding is the subject's emphasis upon the presence of an "inner orientation" of the figure whose role he is taking. Thus, any indication of feelings, attitudes, motives, and intent which distinguishes this role from others would suggest the RT level of shift. Coordination between the self-entry and the initial story at this level of role-taking ranges from basic fragmentation and/or global coherence (RT1), to a relative degree of consistency but with some irrelevancy and contradiction (RT2), to essential coherence and continuity (RT3).

B. Elaboration-entry categories

1. CE (character elaboration): scored when there is no clear differentiation between an "outer orientation" ascribed to the elaboration-entry and an "inner orientation" ascribed to the self-entry. At this level of scoring, CE1, CE2, and CE3 are evaluated in terms of the degree of consistency between the elaboration entry and the initial story. Scoring for consistency is based on the same criteria as previously outlined with respect to the self-entry material.

2. PE (perspective elaboration): in order to score at this level of shift, the subject must indicate an appropriate inner-outer orientation in his self and elaboration entries when taking the role of a given figure. That is to say, the self-entry must be inner-oriented and the elaboration-entry must be outer-oriented. Level of PE (PE0 through PE5) is a function of the degree of coordination between the self and elaboration entries with respect to a given figure. That is, instead of judging degree of consistency between the elaboration-entry and the initial story (as in CE), the judgment is made on the basis of the degree of coordination between the self-entry of a given figure and the elaboration entry on that same figure given from the reciprocal viewpoint.

3. CP (change of perspective): Scored when the S is able to produce a PE not only from the viewpoint of a given figure, but from the viewpoint of the reciprocal figure as well. This essentially suggests that the individual is coordinating perspectives from both points of view, and hence is showing a type of reversibility of thought indicative of the cognitive operation as delineated in Piaget's system. Different levels of CP are not scored for the present sample.

Results

RTT validity

The basic question regarding the validity of the modified RTT was the following: Does the role-taking performance of the mentally retarded subject follow a developmental pattern which is similar to that of the previously tested intellectually normal subject. To this end, the role-taking behavior of the present sample was evaluated in regard to whether the relationships between forms of role-taking and mental age established in previous studies (Feffer and Gourevitch, 1960; Candell, 1965; Buchsbaum, 1965) were also present in the data collected on the present group. A positive significant empirical association between level of role-taking and mental age constituted the minimum validity requirement for the present form of the RTT.

(1) Role-taking shift. As has been noted, two major dimensions are involved in the analysis of role-taking. The first is the type of shift which the subject evidences when taking a given role. This is expressed in terms of the role-taking categories: NR, SR, RT, CE, PE. Table 1 indicates the percentage of subjects at each mental age level manifesting the various types of shift categories; for this analysis, degree of consistency is disregarded. It may be seen that the shift patterns, in general, are in accord with their apriori developmental placement. Thus, the developmentally lowest self-entry category of shift (NR) has the highest incidence of occurence at the lowest mental age, the intermediate category (SR) has the highest incidence of occurence at intermediate mental age levels, and the highest category (RT) at the higher mental age levels. A similar pattern is evidenced for the elaboration-entry categories as well. The association between mental age and level of shift reaches statistical significance with respect to all categories with the exception of CE.

Since the relationship between shift level and mental age is consistent for all categories, a composite shift index (Table 2) was derived by assigning weighted scores in accordance with the developmental status of the shift categories. Table 3 indicates the distribution of subjects, as so scored, at the different mental age levels. The association between mental age and composite shift score is significant at the <.001 level of confidence.

(2) Role-taking coordination. The second major dimension involved in the analysis of role-taking is that of the degree of coordination evidenced between the subject's various versions of his initial story. This is expressed in terms of the degree of consistency at each of the self-entry levels (e.g., SR1, SR2, SR3) as well as the subtlety of coordination at the elaboration-entry levels (e.g., PE0, PE1, PE2, PE3). Table 4 describes the percentage of subjects within each mental age group giving the response in a particular coordination category. As may be seen, the pattern of functioning is in accordance with the developmental placement of the coordination categories. There is an increasing degree of coordination with increasing mental age at each level of role-taking shift. These relationships reach statistical significance for all categories.[1]

A composite coordination index (Table 5) was also derived by assigning weighted scores in accordance with degree of coordination at each level of shift. Table 6 indicates the distribution of subjects, as so assessed, at the various mental age levels. The association between the composite coordination score and mental age is significant at the <.001 level of confidence.

[1] The distribution of subjects in regard to coordination categories is elaborated in Appendix E.

Table 1

Mental Age and Level of Shift in Role-taking

Mental Age Group	Mean Chron Age	Level of Role-taking Shift (% S's giving response)				
		Self-entry			Elaboration-entry	
		NR	SR	RT	CE	PE
11.0 - 14.2 (N=19)	16.0	16	42	90	47	74
10.0 - 10.9 (N=20)	15.0	15	50	90	45	80
9.0 - 9.9 (N=28)	14.3	25	68	71	79	71
8.0 - 8.9 (N=14)	13.1	36	71	50	71	29
7.0 - 7.9 (N=19)	12.9	26	89	53	74	16
6.0 - 6.9 (N=12)	10.2	67	58	50	67	25
4.0 - 5.9 (N=11)	7.9	55	55	45	45	0
X^2 [a]		7.98	3.42	14.3	.87	39.3
df[b]		1	1	1	1	1
P		<.01	<.10>.05	<.001	>.30	<.001

[a] It should be noted that cells within each mental age level are not independent. A subject may take one role at a simple level of role-taking (SR) and then the other at an RT level. That particular subject would thus contribute to two self-entry categories, while another subject functioning solely at the RT level would contribute only to one category. Because of this lack of independence, the X^2 analysis is based on a presence-absence dichotomy for each column.

[b] Based upon a median mental age

Table 2

Weighted Scores for Role-taking Shift (Composite Shift Index)

Self-entry		Elaboration-entry	
NR (no role-taking)	= 0	CE (character elaboration	= 0
SR (simple role-taking)	= 1		
RT (role-taking)	= 2	PE (perspective elaboration)	= 2

Example of scoring:

Story 1	Story 2
SR 3 - PE 2[a]	RT 2 - PE 3
(1) (2)	(2) (2)
NR 1 - CE 3	RT 3 - PE 2
(0) (0)	(2) (2)

Composite score for role-taking shift = 11

[a] Degree of coordination is ignored here.

Table 3

Mental Age and Composite Shift Index

Mental Age Group	Number of S's Scoring above and below the Median Composite Index of Shift	
	Below Median	Above Median
11.0 - 14.2 (N=19)	4	15
10.0 - 10.9 (N=20)	5	15
9.0 - 9.9 (N=28)	9	19
8.0 - 8.9 (N=14)	10	4
7.0 - 7.9 (N=19)	16	3
6.0 - 6.9 (N=12)	9	3
4.0 - 5.9 (N=11)	11	1
$X^2 = 34.9$ df = 1[a] P = <.001		

[a] Based upon a median mental age.

Table 4

Mental Age and Degree of Coordination (% S's giving response)

Mental Age Group	Shift Categories (highest degree of coordination attained by S within each shift category)																
	NR (N = 39)[a]			SR (N = 77)			RT (N = 83)			CE (N = 78)			PE (N = 59)				CP (N = 123)
	1	2	3	1	2	3	1	2	3	1	2	3	0	1	2	3	
11.0- 14.2	0	33	67	0	25	75	12	23	65	0	11	89	29	14	43	14	32[c]
10.0-10.9	33	0	67	10	30	60	17	5	78	22	11	67	44	19	6	31	35
9.0-9.9	14	14	72	10	37	53	15	20	65	9	41	50	65	25	5	5	18
8.0-8.9	40	40	20	20	30	50	29	29	42	20	30	50	75	0	0	25	0
7.0-7.9	60	20	20	47	35	18	70	10	20	50	21	29	100	0	0	0	0
6.0-6.9	76	12	12	29	42	29	50	17	33	56	11	33	100	0	0	0	0
4.0-5.9[b]	100	0	0	83	17	0	100	0	0	100	0	0	0	0	0	0	0
X^2	9.69			9.40			7.22			7.56			8.97				15.5
df=1[e]	1			1			1			1			1				1[d]
P	<.01			<.01			<.01			<.01			<.01				<.001

[a] 39 subjects out of 123 gave an NR response.
[b] Of those subjects in the 4.0-5.9 mental age group who gave an NR response, 100% gave an NR1, while none gave NR2 or NR3.
[c] Of the 123 subjects, 32% gave a CP response.
[d] Based on a presence-absence dichotomy (N=132).
[e] Based on group medians for mental age and degree of coordination.

Table 5

Weighted Scores for Degree of Coordination

A. Between initial story and role-taking (self-entry)

Basic fragmentation and/or global coherence = 1

Relative degree of consistency in regard to the major theme, but with minor contradictions and/or irrelevancies..... = 2

Essential coherence or consistency..... = 3

B. Between role-taking perspectives (elaboration-entry)

Perspective elaboration	Change of perspective
PE 0 = 0	CP (PE X PE) = 2
PE 1 = 1	CP (all other combination of higher PE's) = 5
PE 2 = 2	
PE 3 = 3	
PE 4 = 4	
PE 5 = 5	

Example of Weighted Scoring:

Story 1				Story 2			
SR[a]2	-	CE3	(first role)	RT2	-	PE2	(first role)
(2)		(3)		(2)		(2)	
RT1	-	PE	(second role)	RT3	-	PE1	(second role)
(1)		(0)		(3)		(1)	

Plus Bonus for CP (PE2 X PE1) = 5

Total score = 19

[a] Shift level is ignored here.

Table 6

Mental Age and Composite Coordination Index

Mental Age Group	Number of S's Scoring above and below Median Composite Index of Coordination	
	Below Median	Above Median
11.0-14.2 (N=19)	3	16
10.0-10.9 (N=20)	6	14
9.0-9.9 (N=28)	8	20
8.0-8.9 (N=14)	7	7
7.0-7.9 (N=19)	14	5
6.0-6.9 (N=12)	10	2
4.0-5.9 (N=11)	11	0
X^2 = 30.1 df = 1[a] P = <.001		

[a] Based upon median mental age

(3) Overall Index. Combining the shift and coordination scores for each subject provided a general, overall index of role-taking performance. The relationship between this overall index and mental age is indicated in Table 7 and is significant at the <.001 level of confidence.

(4) Highest Score. Finally, in order to more closely approximate the method of scoring in previous studies, each subject was rated with respect to his highest category of role-taking, regardless of the story in which this was evidenced. This method of scoring was used in previous studies (e.g., Feffer and Gourevitch, 1960) in order to minimize the effects of changes in motivation and attention during testing. As may be seen in Table 8, the median scoring level of each mental age group increases from the lowest mental age category to age 10.0 at which point it levels off. The relationship between role-taking level, as so scored, and mental age is significant at the <.001 level of confidence.

In evaluating the individual's highest role-taking score, it may be further noted that in the Feffer and Gourevitch study, the developmentally highest RTT category (Change of Perspective) did not systematically emerge until a mental (and chronological) age of 9 years. The present data are in close accord. As may be seen in Table 4, of the 56 subjects below the mental age of 9.0, none attained a CP score[1]. From the mental age of 9.0 (Mean C.A.=14.3) CP scores become evident: 9.0=18%, 10.0=35%, 11.0-14.2=32%.

Role-taking and Chronological age. Since chronological and mental age are typically correlated, there is the possibility that the present findings are primarily a function of a more basic relationship between chronological age and role-taking. As may be seen in Table 9, chronological age is, in fact, significantly related to both role-taking (Overall Index) and mental age. This possibility, in turn, raises the question that role-taking, instead of being an index of cognitive maturity in the Piagetian sense, may primarily reflect social experience. The present sample of retarded subjects permitted an evaluation of this question since one could partial out the influence of chronological age more readily with this sample than with an intellectually normal group in which mental and chronological age are, by definition, highly coordinate. A "roving median" technique, patterned on a suggestion by Cronbach (1949) and more fully described in Feffer and Gourevitch (1960) was used to partial out the influence of chronological age on the relationship between role-taking and mental age. Significant positive relationships between mental age and role-taking[2] were still present (X^2=8.1, P=<.01, df =1) when the influence of chronological age on the relationship was thus controlled.

[1] Direct comparison with other RTT scores are confounded by the changes made in the present scoring system.

[2] The overall index is used for these analyses.

Table 7

Mental Age and Overall Index

Mental Age Group	Number of S's Scoring above and below the Median Overall Index Score	
	Below Median	Above Median
11.0- 14.2 (N=19)	2	17
10.0-10.9 (N=20)	5	15
9.0 - 9.9 (N=28)	8	20
8.0 - 8.9 (N=14)	8	6
7.0 - 7.9 (N=19)	16	3
6.0 - 6.9 (N=12)	11	1
4.0 - 5.9 (N=11)	11	0
X^2 = 43.6 df = 1[a] P = <.001		

[a] Based on median mental age.

Table 8

Mental Age and Highest Role-taking Score

Mental Age Group	Median RTT score[b] for mental age group	Number of S's Scoring above and below group median	
		SR_3 - CE_2 (6)	SR_3 - CE_3 (7)
11.0 - 14.2 (N=19)	RT_3 - CE_3 (8)[c]	4	15
10.0 - 10.9 (N=20)	RT_3 - CE_3 (8)	6	14
9.0 - 9.9 (N=28)	SR_3 - CE_3 (7)	10	18
8.0 - 8.9 (N=14)	SR_3 - CE_2 (6)	9	5
7.0 - 7.9 (N=19)	SR_2 - CE_2 (5)	16	3
6.0 - 6.9 (N=12)	SR_2 - CE_1 (4)	10	2
4.0 - 5.9 (N = 11)	SR_2 - (3)	11	0
X^2 = 28.5			
df[a] = 1			
P = <.001			

a Based on median mental age
b The score most representative for that mental age group
c Median overall index score for that mental age group

Table 9

Relationships between Chronological Age,

Mental Age and RTT Overall Index

Chronological Age (yrs.)	Mental Age		RTT Overall Index	
	Below Median	Above Median	Below Median	Above Median
16.0 - 21.0	7	23	8	22
14.0 - 15.9	5	22	4	23
12.0 - 13.9	20	13	18	15
6.0 - 11.9	33	0	31	2
χ^2	43.1		34.6	
df[a]	1		1	
p	<.001		<.001	

[a] Based on median mental age.

The same procedure was followed in partialling out the influence of mental age upon the relationship between chronological age and role-taking. Here it was found that the relationship between chronological age and role-taking was not significant when the influence of mental age was controlled (X^2= 2.20, P=<.20 >.10, df=1).

RTT reliability

In order to provide an estimate of interjudge reliability, 20 RTT protocols were selected at random and scored[1] by a research assistant who followed the revised scoring manual. The degree of consistency between her scoring and that of the principal investigator's was determined by the Spearman rank difference correlation: rho= +.84. This degree of interjudge consistency compares quite well with that found in Feffer and Jahelka (1968): rho=+.71, and in Lowenherz and Feffer (1969): rho=+.69.

With regard to test reliability, a rough index of correlation was afforded by the Chi-square test of independence and the derived contingency coefficient (C). The subject's RTT performance (highest category of role-taking) on the first story was compared to his performance on the second story. The hypothesis of independence was rejected beyond the <.001 level of confidence (X^2 = 35.6, df=1, C= .47). These findings compare favorably with those of the Feffer and Gourevitch (1960) study (X^2 = 15.3, df=1, C= .42).

Conclusions and recommendations

The aims of the present study have been 1) the modification of the RTT for use with the mentally retarded and 2) the evaluation of the modified RTT with respect to whether or not it met established validity and reliability criteria. These aims are considered as preliminary ones inasmuch as they constitute necessary conditions which have to be met in order to study the relationship between role-taking and social adequacy in the retarded.

As in the previous studies of Feffer and Gourevitch (1960), Candell (1965), and Buchsbaum (1965), mental age was considered as a rough index of cognitive level of development. A minimum validity requirement for the modified RTT was the presence of an empirical association between role-taking performance and mental age in the present sample of retarded subjects. In this regard, the results of the present study indicate that there are significant associations between mental age and various indices of the retardates' role-taking behavior including a) level of shift, b) level of coordination, c) a composite index of overall performance

[1]The overall index is used for these analyses.

which combines shift and coordination scores and d) the highest RTT category evidenced in performance. The relationship between mental age and the overall composite role-taking index continues to be statistically significant when the influence of chronological age is controlled. These results suggest that the role-taking of the retarded, as elicited by the revised RTT procedure and as evaluated by the present scoring categories, has developmental implications which are similar to that of previously tested intellectually normal children.

With respect to reliability, the results also indicate that inter-judge agreement and test reliability are at least as high as that in previous studies. It is concluded, therefore, that the goal of the present study has been achieved, namely, the adaptation of the RTT for use in studies which involve the role-taking of the mentally retarded. These findings, then, prepare the basis for a future study in which the present form of the RTT can be used as a measure of the retardate's role-taking ability in relation to behavioral indices of social adequacy.

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Appendix A

Feffer, M. A developmental analysis of interpersonal behavior. Psychological Review, in press.

A developmental analysis of interpersonal behavior

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Abstract

The present analysis of interpersonal behavior is based upon two interrelated conceptions which are central in Piaget's approach to cognition: 1) The individual knows or constructs his world in accordance with certain principles of organization and 2) The individual's constructions are expressive of particular equilibrium relationships between subject and object. The stages of cognitive development in Piaget's system are essentially formalized characterizations of such different forms of equilibrium.

In general, Piaget's characterizations of these equilibrium forms have stemmed from his studies of the development of conservation in such "impersonal" categories of experience as quantity and number. A critique of Asch's approach to social interaction suggests, however, that the processes involved in the organization of interpersonal events are isomorphic to those involved in the organization of impersonal events. This view can be expressed in terms of an extended version of the above two conceptions: 1) The individual constructs his world in the form of complementary polarities which at certain levels of development are experienced as physical dimensions of the impersonal event and as role dimensions of the interpersonal event and 2) The equilibrium relationship between polarities is a determining factor with respect to the conservation of both impersonal and interpersonal events. The present formulation attempts to delineate some of these equilibrium forms in the individual's construction of interpersonal events.

Psychological Review, in press (May, 1970)

A developmental analysis of interpersonal behavior[1]

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Although interpersonal behavior and dynamic content have received some attention within Piaget's framework, his concepts have been primarily directed toward the analysis of impersonal cognitive organization. In an earlier paper (Feffer, 1967), the writer has attempted to extend the implications of some of these concepts to the interpersonal area, and in particular, to symptom expression. The present paper clarifies the conceptual background of this earlier attempt and enlarges its field of application. To this end, the paper first summarizes in some detail those formal aspects of Piaget's framework which are relevant to an analysis of social interaction. A critique of Asch's gestalt approach to the individual-group relationship follows: this is intended to illuminate an essential complementarity between Piaget's genetic emphasis upon impersonal content and Asch's agenetic emphasis upon interpersonal content. The critique forms the basis for a subsequent conceptualization of interpersonal behavior which reformulates the individual-group relationship and suggests some implications of Piaget's equilibration model for social development.

Piaget's approach to cognitive development

Basic to the cognitive nature of Piaget's viewpoint is a Kantian assumption which he shares with the classical gestalt theorists, namely, that the world is known or organized in accordance with certain structural givens. However, in fundamental opposition to the traditional gestalt viewpoint is Piaget's central concept of development: that in so organizing the object, these structures themselves are changed in ways which permit a more penetrating construction of

the "thing-in-itself". More specifically, these structures on the cognitively primitive sensory-motor level, refer to the constitutionally given basis of such diffuse forms of behavior as sucking and grasping patterns (schemas). Piaget (1963a) assumes that such schemas have a built-in disposition to repeatedly construct the object until sufficiently consolidated or strengthened. Given the nature of an average environment, this intrinsic need for cognitive structures to exercise themselves sets into motion the basic developmental trend. Thus, a variety of different objects are ordinarily available for the consolidation of the sucking reflex (assimilation). However, in sucking each newly encountered object, the organism changes its behavior in accordance with the specific aspect of the object (accommodation), hence a number of slightly different schemas more specifically attuned to reality. A sucking schema, which originally had a unitary global character, becomes differentiated into sucking patterns geared to nipple, thumb, pillow, etc. Since each is now a newly formed schema, the whole cycle of repetition and consolidation is again triggered, resulting in the incorporation of a new range of objects. Thus, there is an increasing differentiation of the original global behavior pattern into an increasingly complex network of related schemas.

Piaget's differences with traditional gestalt theory clearly emerge in his systematic exploitation, in equilibrium terms, of this dialectic between the organism and the environment. He proposes in an equilibration model (described later) that the relationship between subject and object changes, as a function of this interchange, from one form of equilibrium to another. These equilibrium relationships, which are manifested in particular forms of knowledge, essentially constitute the different stages of cognitive development. As would

be expected, then, Piaget is especially critical of the gestalt thesis that the equilibrium relationship takes the same form (as typified by the various gestalt principles of organization) regardless of whether the cognition is a percept, problem solving of the ape, or a syllogism. He has maintained, in this regard, that such principles of organization as similarity and proximity, although sufficiently describing forms of equilibrium in more primitive cognition (including perception), inadequately characterize the process underlying more advanced cognition. Piaget's (1963b) analysis of the visual illusions exemplifies his general position. Focusing upon the part-whole relationship as a means of explicating the underlying equilibrium process, he emphasizes the essential contribution of the gestalt theorists, namely, that it is not the additive combination of part-attributes which comprises the quality of the whole; rather, whole qualities are so intrinsically a function of the relationship between parts (as characterized by the similarity, proximity principles) that the whole has the same quality when each part is changed, provided that their interrelationship remains constant. But by the same token, he notes, if the relationship between parts changes, then the whole also changes. Thus, he points out in regard to the condition for the Delboeuf illusion (one circle enclosing another), if one increases the size of the inner circle by a given amount and hence decreases the difference in size between the inner and outer circles by the same amount, under certain circumstances the outer circle will appear smaller. The part-whole relationship involved in this type of perceptual organization accordingly is such that a shift in the relationship between parts results in non-conservation--or a phenomenal change in the size of the whole.

Piaget (1963b) views the non-conservation which constitutes the visual illusion as being inherent in the very act of centering or focusing upon a given aspect of the perceptual field:

"...It is simply that because the element which is fixated longest (or most often, or most intensely, etc.), is by this very fact magnified, as though the object or the region on which vision is concentrated, occasioned an expansion of perceptual space...Perceptual space then is not homogeneous but is centralized from moment to moment and the area of centralization corresponds to a spatial expansion..." (p. 72).

The question arises, then, if perception is so unstable, how can one account for the various constancies classically noted by the gestalt theorists. Piaget suggests in this regard that the distortion of centration is corrected to an extent by decentralization, that is, by shifting focus from one part of the perceptual field to another. Thus, the perceptual constancies are a function of successive distortions compensating for each other. In the visual illusion, however, elements of the figure are too close to each other for decentralization to occur, hence a distortion which is uncorrected.

The balancing or correcting function of decentralization serves as a unifying theme when Piaget characterizes the greater stability of developmentally advanced cognitive functioning, or what he terms the cognitive operation. He notes that in the mathematical part-whole relationship (taken as the prototype of advanced cognitive operations), a shift in the relationship between parts is exactly compensated and the whole is completely conserved [e.g., 5+2 = 7; 5 (+1) +2 (-1) =7]. He then contrasts the form of equilibrium in the mathematical part-whole relationship to that in the perceptual

part-whole:

"This analysis shows that the form of equilibrium inherent in perceptual structures is quite different from that of the operational structures. In the latter, equilibrium is both mobile and permanent, and changes within the system do not modify it because they are always exactly compensated, owing to actual or potential converse operations. In the case of perception, on the other hand, each modification of the value of one of the relations involved means a change of the whole, to the extent of introducing a new equilibrium distinct from the one characterizing the previous state. There is then 'displacement of equilibrium' and no longer permanent equilibrium" (p. 70).

Having formalized the notion that a reciprocal correction of opposing forces is the equilibrium basis for conservation, and having characterized the form which this equilibrium process takes in perception as compared to the advanced cognitive operation, Piaget (1963b) indicates the general relationship between his structural emphasis on schemas and his functional emphasis on forms of equilibrium:

"Everything indicates therefore, that perception, obliged to proceed step by step by immediate but partial contact with its object, distorts it by the very act of centering it, although these distortions are reduced by equally partial decentralizations, while intelligence (mf: developmentally advanced cognition) encompassing in a single whole a much larger number of facts reached by variable and flexible paths, attains objectivity by much more thorough decentralization" (p. 76).

Piaget is thus attributing relatively unstable forms of knowing to uncompensated changes in isolated, global schemas. That is to say, if the

object is known, i.e., has meaning, only by virtue of being organized by a particular schema, and if at the same time, this schema changes as a function of the peculiar nature of the object being assimilated, then the meaning also changes by virtue of the fact that the basis for knowing the object has changed. The construction of the object, however, takes on a different characteristic, given a differentiated network of related schemas. It is the specifically attuned schema, e.g., specific shaking pattern to rattle, particular perceptual focus, etc., which assimilates the object and which, in turn, accommodates to its peculiar nature, while the related schemas do not change, relatively speaking, and thereby provide a stable basis of meaning. In the developmentally advanced operation, then, there is a "simultaneous decentering" whereby any change in the part is immediately and thoroughly corrected by a whole system of balancing operations. This stability of internal organization manifests itself in stable forms of cognitive interchange between subject and object, or in other words, forms of knowledge as represented by the various conservations of space, time, and number.

A consideration of Piaget's interpretation of the processes involved in the conservation of quantity may serve to further underscore the systematic importance which he invests in the concept of decentralization and, more particularly, in the nature of a part-whole organization in which immediate and complete compensation is afforded by simultaneous decentering. In a classic study (Piaget, 1963b), the subject is asked to put an equal number of beads into each of two vases of identical shape and size. The contents of one vase are then emptied into progressively thinner vases, the other container serving as the standard. Under these conditions, Piaget has

found that within a certain age range children change their judgment of quantity in characteristic ways. Those who state that a given vase now contains more beads tend to justify this by pointing to the higher level in that container as compared to the standard. Others may insist that the same vase contains fewer beads and point to the smaller circumference. Abrupt shifts in judgment are also observed; that is, some children who maintain that a given vase contains more beads than the standard reverse their judgment when presented with progressively thinner vases into which the beads are poured. At a later age, children maintain that the comparison vase contains the same amount of beads as the standard regardless of differences in shape between vases.

As might be anticipated, Piaget ascribes the younger child's lack of conservation to the inordinate influence of one part of the situation upon the whole: focusing attention only on the increased height leads to an overestimate of quantity, while focusing on the decreased circumference leads to an under-estimate. In addition, he attributes the child's fluctuating judgments to an isolated sequential focusing upon each complementary aspect of the situation, that is, from height to circumference and vice versa. By the same token, the older child's conservation of quantity is seen as a function of his coordination of complementary dimensions, namely, changes in both height and circumference are considered in relation to each other.

Clearly, then, Piaget is systematically elaborating upon the formulation that a) there is inherent distortion in centrations which are mediated by single, isolated schemes, b) such instability is partially corrected on a primitive level by an oscillating balance between opposing forces, that is,

by sequential decentering, and c) complete correction of distortion is afforded by the presence of cognitive operations in terms of which there is a simultaneous coordination of compensating dimensions.

One of the clearest statements of the part-whole relationship involved in the cognitive operation has been made by the neo-Kantian, Ernst Cassirer (1953). As such, it serves as an excellent summary statement of Piaget's characterization of this form of the subject-object relationship. In analyzing the fundamental characteristics of cognition in terms of which the various categories of thought are constructed, Cassirer notes that the idea of a point as a particular position only makes sense "in" space, that is, in terms of a system comprising <u>all</u> designations of position. He then goes on to state:

"All these relations disclose the same fundamental characteristic of consciousness, namely, that the whole is not obtained from its parts, but that every notion of a part already encompasses the notion of the whole, not as to content, but as to general structure and form" (p. 102).

Cassirer then notes that this part-whole relationship is particularly realized in the developmentally advanced use of signs and representations:

"We have seen that the particular of consciousness 'exists' only insofar as it potentially contains the whole and is, as it were, in constant transition toward the whole. But the use of the sign liberates this potentiality and enables it to become true actuality. Now <u>one</u> blow strikes a thousand connected chords which all vibrate more or less forcefully and clearly in the sign... It no longer designates the body according to its sensuous content, according to its immediate sensory data, but represents it as a sum of potential 'reactions',

of possible chains of causality which are defined by general rules. In the chemical formula, the totality of these necessary relations fuses with the expression of the particular and gives this expression of the particular an entirely new and characteristic imprint" (pp. 108-109).

Thus, developmentally advanced cognition, by structuring reality in terms of a system of signs, evidences a part-whole organization in which the part of necessity recapitulates the whole, and in so doing, is ideally conserved. That is to say, the object, when designated by the sign, implies the totality of possible conditions given by the system of signs. By virtue of this, it is given constant meaning under all possible conditions within the system.

The problem of change. In characterizing the different equilibrium systems which constitute the developmental stages, Piaget has also faced a correlative problem, namely, that of explicating those processes which underlie change from one form of equilibrium to another. To this end, he has proposed an equilibration model (Piaget, 1968) which essentially formalizes the dialectic involved in the subject-object relationship. The equilibration model suggests, in effect, that a given form of cognitive organization comes about as a resolution of the contradictions inherent in more primitive or unstable forms of organization. As has been noted, the subject knows or organizes the object in accordance with structural givens which change in particular ways as a function of so constructing the object. This process gives rise to a number of different schemas which serve as a basis for further constructing the object. However, given the inherent nature of the object, the subject may encounter inconsistencies or contradictions between these

different modes of organizing experience. The contradiction (disequilibrium) leads to a cognitive reorganization, or a new equilibrium between subject and object, in terms of which the previous conflict is resolved. The subject then attempts to utilize this new mode of organization in further knowing the object, new contradictions are encountered, and the cycle is repeated.

In regard to the water level problem, the equilibration model would suggest that just as the infant consolidates a primitive schema, such as sucking, by applying it to diverse events, so too will the older child literally test the limits of a parameter such as length (cf. White, 1959) by rolling clay into increasingly longer forms, by building blocks into increasingly higher structures. And just as changes in the sucking schema are necessitated by the peculiar demands of the reality event <u>when it is structured in these particular terms</u>, so too will the dimension of width, as a reciprocal polarity of the physical event, be encountered when the event is structured in terms of a length dimension. In terms of these considerations, then, the child's fluctuating judgments of quantity in the water-level problem would indicate that he has available two isolated modes of constructing reality events, modes which lead to conflict precisely by virtue of the invariant nature of the event which is being constructed. That is, the child eventually runs into the problem of something being more (focus on increased height) and less (focus on decreased width) at the same time. A cognitive reorganization, whereby the polar dimensions are coordinated in achieving conservation, represents a resolution of this contradiction in the form of a more stable equilibrium between the subject and object.

Asch's conception of the individual-group relationship

Although Piaget's concepts have been presented as central to a developmental analysis of social behavior, it is clear that an extrapolation is required to extend his system from its primary concern with what has been referred to as the "cold-blooded aspects of cognition" (Flavell, 1963, p. 419). This section provides the basis for an extension by focusing upon a complementarity between Piaget's developmental approach to impersonal cognition and Asch's (1952) non-developmental approach to interpersonal cognition. The essential thesis is that Asch structures the individual-group problem as a part-whole relationship which is isomorphic to the advanced cognitive operation within Piaget's framework.

Asch initially presents two traditional approaches to the problem of understanding the relationship between social forces and individual behavior. He notes that one, the individualistic thesis, is based upon the proposition that the individual is the sole reality: that hating, thinking, occur only in individuals. Given this as a starting point, it follows that the group is nothing more than a collection of individuals and derives its significance from the characteristics of the part. This view is expressed, for example, in the notion that war is a simple and direct expression of aggressive urges. The antithetical thesis, the group mind approach, starts from an opposite premise: that group phenomena arise which have laws of their own and which are not reduceable to the characteristics of the individual. From this viewpoint, war is an emergent phenomenon in relation to which facts of individual motivation are trivial and misleading.

Asch derives two insights from these positions: first, that psychological processes occur only in the individual, and second, that each individual is in the midst of an ordered system of social forces which he has not single-handedly produced. His own formulation of the individual-group relationship attempts to integrate these insights by suggesting that a reciprocal relationship exists between individual and group, viz., that on the one hand, there is a unique quality of individual cognition that gives rise to groups at the human level, and on the other, that group conditions transform the cognitive nature of the individual into that which is peculiarly human. He goes on to state:

"To understand the intimacy and separateness between individual and group we must grasp the unusual process that gives rise to groups at the human level. It is a process in which individuals play an extraordinary role, confronting us with a type of part-whole relation unprecedented in nature. It is the only part-whole relation that depends on the recapitulation of the structure of the whole in the part" (p. 257).

The question which is basic to the present critique can be raised: What are the particular properties of individual cognition in terms of which this "unprecedented" part-whole relation is possible? As one follows Asch's systematic approach to the processes underlying social interaction, these cognitive properties emerge clearly. The problem is first posed: given the gulf between phenomenal worlds, how do the perceptions, thoughts, and motives of the one become known to the other such that each can act relevantly toward the other. It is immediately apparent that Asch's initial resolution of the problem is presented in the terms of a traditional gestalt approach in that he first advances the classic principles of perceptual organization and then extends these to cover relationships between cause and effect. Thus, he evokes

the principle of similarity as being essential to the experience that a wet object causes objects in contact with it to become wet, that a moving object sets other objects in motion. He then propcses that the individual organizes the social actions of the other in terms of the same principles that govern his experience of physical events. He suggests that human actions are as directly perceived as are physical events and that causation, as an authentic mode of perceptual experience, applies not only to the relationship between physical events, but to the relationship between the individual and his actions. However, Asch maintains, even though we directly organize the expressive qualities of social action and phenomenally relate such action to the person as the causal agent, this is not sufficient to account for the experience of the other's perceptions, motives, and thoughts. A further proposition is required, namely, that there is an intrinsic isomorphic correspondence between action and experience, that "the emotion of joy and the expressions of joy have identical characteristics, that formally the same qualities are present in the experience and movements of tension, hesitation or daring..." (pp. 158-159). The consequences of this assumption are direct: "If there is a relationship of isomorphism between emotional experience and expression, and if expressive movements are perceived as perceptual facts...we would be justified in saying that we have direct access to the inner conditions of persons" (p. 190).

It is clear, thus far, that Asch's formulation of the problem is entirely consistent with the systematic implications of his initial gestalt assumptions. His use of the isomorphism concept[2] as well as his extension of the proximity and similarity principles to expressive action and to causal organization in the physical and social realms raise no difficulty in regard to theoretic continuity. However, at a critical point in his formulation, Asch introduces

a dimension which he not only considers fundamental to social interaction, but which he also emphasizes cannot be derived from the aforementioned characteristics of individual cognition. There is more involved in the mutual relevancy of social interaction, he notes, than merely the direct experience of the other. Rather, social interaction has a unique quality. He asks in regard to the simple social situation of two boys carrying a log:

"How can we understand this performance psychologically? A first condition is that each should have the goal in mind and understand the effort needed to overcome the difficulty. With this common goal and understanding the two apply themselves jointly to carrying the log. What does this statement mean concretely? It means that the boys are fitting their actions to each other and to the object and are involved in a give-and-take requiring considerable sensitiveness. The two do not apply force in succession, or in opposite directions: they bring a common force to bear simultaneously...

This performance is a new product, strikingly unlike what each participant would do singly and also unlike the sum of their separate exertions...We have not a mere addition of forces, but an organization of effort" (pp. 173-174).

Thus, social interaction does not merely consist of the "other" as an object to be experienced, but rather is an interpersonal event, viz., a particular kind of relationship between individuals. Further consideration of this unique dimension of social interaction brings out the fact that Asch is critical of those approaches which view social interaction as being comprised of participants who contribute identical elements to the social event. In his evaluation of the "sympathetic induction of emotions", he notes that contagious action, as in panic, actually marks the dissolution of the group relationship in that each person is completely absorbed in his own affective response. He emphasizes that, in contrast to identical elements, social interaction is

comprised of acts which complement each other:

"Generally A starts what B continues or completes; B opposes A, or advises him, or urges him on. Social actions have this reciprocal character; they contain the relations of giving and taking, of buying and selling, of seizing and defending, of asking and answering" (p. 170).

Moreover, there is an essential property which characterizes the relationship between these complementary acts, that of simultaneity:

"A simple example is a cooperative hunting expedition. When they sight a herd the hunters scatter to form a large circle around it; a few then run toward the herd to start the animals running. The circle of hunters closes in, ready to shoot or rope the animals. In such instances, the essential factor is the presence of different and complementary actions executed simultaneously and with reference to each other" (p. 175).

Thus far the property of simultaneity which characterizes the relationship between complementary actions is being applied to a "whole" property of social interaction, namely to that of the group relation. However, a fundamental premise in Asch's approach is that individual psychological organization is the basic unit of analysis in such interaction:

"The capacity to perceive a situation that includes others and ourselves and to perceive others as referring themselves to the same situation is the first requirement for the formation of a social field, of a group relation at the psychological level. It is a remarkable achievement, which involves transcending one's own viewpoint by bringing it in relation with that of the other. This transcendence is, however, a process that occurs in the individual...At this point we discover the full significance of the proposition that the individual is the seat of social events. It is individuals with this particular

capacity to turn toward one another who in concrete action validate and consolidate in each a mutually shared field" (pp. 163-164).

Given this premise, it follows that the unique quality involved in the type of social interaction which Asch is describing is a function of a unique form of cognitive organization:

"A full fledged social act requires more than the psychological representation of the other in each actor. Interaction of the form we have been describing requires a new, unique organization in each of the participants... The paramount fact about social interaction is that the participants stand on common ground, that they turn toward one another, that their acts interpenetrate and therefore regulate each other" (p. 161).

This form of individual cognitive organization is referred to by Asch as the "self", a concept very similar to that advanced by George Mead (1934). Essentially, the self as subject, or the "I", is viewed by Mead as spontaneous and free, while the self as object, or the "me", is viewed as the cognitive representation of the "role of the other", viz., group values which are assimilated as one's own and which control the impulsive, spontaneous aspect of the self. When taking the role of the other as in considering the other's response to an intended action, the individual is accordingly serving as the subject and, simultaneously, as the object of experience. It is in this sense of being simultaneously both a subject and object that Asch characterizes the self as being unique among objects in the psychological field.

The question can now be answered as to the characteristics of individual cognition which are inherent in Asch's formulation of the individual-group relationship. Although each individual in the social relationship is obviously influenced by the reactive behavior of the other, more fundamentally his beha-

vior is governed by taking the other's viewpoint. This serves to generate anticipations as to the other's complementary response to an intended action and, in turn, serves to correct or modulate the intended behavior. Accordingly, what is basic to the simultaneous dovetailing of complementary actions on the group level is the influence of the group relationship (the role and reciprocal) on the particular action. But the role and reciprocal which comprise the "whole" can have influence on the particular action only if the relationship is represented within the "part", within individual cognitive organization. Hence, the attribute which typifies the group structure, namely, the simultaneous occurrence of complementary acts, takes the form within individual psychological organization as a simultaneous and reciprocal regulation between complementary viewpoints, or as a self which is both the subject and, simultaneously, the object of experience.

Comparison of Piaget and Asch

The points of correspondence between Piaget's characterization of the advanced cognitive operation and Asch's characterization of interpersonal cognition can now be delineated. 1) Both Piaget and Asch are proposing that the individual structures reality in the form of complementary polarities. For Piaget, whose concern is primarily with impersonal events, these polarities are experienced at a given level of cognitive development in terms of the various physical dimensions of the impersonal object, such as height and circumference. Asch, on the other hand, primarily concerned with interpersonal events (social relationships), suggests that the individual's structuring of the event takes the form of complementary dimensions of role and reciprocal role. 2)Both theorists are suggesting that a reciprocal regulation or balance between polar dimensions underlies the stability of cognitive organization as evidenced in

various conservations. In regard to the structuring of the impersonal event, Piaget underscores the concept of decentralization as a formal expression of the reconciliation and mutual modification of opposing forces. In regard to the structuring of the interpersonal event, Asch is proposing that the social relationship is conserved (maintained) by virtue of complementary rules which interpenetrate and therefore regulate each other. Thus, just as one can view impersonal conservation as based upon a coordination and reciprocal correction between complementary physical dimensions as represented within individual cognitive organization, so too one can view interpersonal conservation as based upon a coordination and reciprocal correction between complementary rules as represented within self-organization. 3) Both suggest that complete reciprocal modification or ideal conservation is achieved in terms of a particular part-whole organization in which the whole is represented in the part. For Piaget, this is carried in his conception that the ongoing cognitive operation is immediately and completely corrected by virtue of its locus within a system of possible actions. Asch expresses this as an unprecedented part-whole relationship, a simultaneous telescoping of the different but complementary roles of the group relation within self-organization.

In conclusion, although Asch has consistently extended the classical gestalt principles to the "representation of the other", he has not been as consistent in his treatment of the processes underlying social interaction. It is suggested, in this regard, that in the "recapitulation of the structure of the whole in the part" Asch is referring to cognitive processes in social interaction which take the same form as the developmentally advanced cognitive operation in the structuring of impersonal reality. It follows that these cognitive processes cannot be systematically derived from traditional gestalt

principles of organization which exemplify primitive mental functioning. However, it is precisely because of this isomorphism that Asch's conceptions provide the basis for the subsequent extension of Piaget's views to interpersonal behavior.

A Developmental Formulation of Interpersonal Behavior

An analysis of primitive social interaction

The preceding evaluation has suggested that Asch is presenting a part-whole relationship which is not uniquely characteristic of social interaction, but one which is the hallmark of developmentally advanced cognition in the structuring of *all* reality events, whether impersonal or interpersonal in nature. A problem of systematic importance immediately arises from this conclusion, namely, does developmentally primitive cognition also place its characteristic stamp upon interpersonal as well as impersonal events? Given the present critique of Asch's approach to the individual-group relationship, this problem can be seen in terms of two related questions: 1) Does primitive social interaction follow a process of unoriented centerings and fluctuation between unorganized polarities and 2) If so, what does such social interaction imply in regard to individual organization (the cognitive attributes of the participants).

It is important to note with respect to the first question that although Asch departs radically from his initial gestalt assumptions in formulating the individual-group relationship, he is nonetheless tied to the agnostic aspect of these assumptions. Nowhere does he systematically analyze a form of social interaction other than that of a simultaneous dovetailing of complementary roles. He refers to such a form, e.g., round panic, only to dismiss this as representative of a group relation, even though the organization involved

would appear to be quite consistent with such gestalt principles as similarity and proximity.[3] Other investigators, however, have described forms of social interaction which clearly evidence the formal qualities of primitive cognitive functioning. Lorenz (1966) in his description of various relationships between phylogenetically primitive organisms provides us with illustrative material which beautifully highlights the fluctuation of "interpersonal" polarities. In his analysis of aggressive behavior in fish, for example, he points out that the fish's readiness to fight is greatest in the center of its own territory and diminishes in proportion to the distance away from its territory. He then observes:

"When the loser flees, the inertia of reaction of both animals leads to that phenomenon which always occurs when a time lag enters into a self-regulating process--to an oscillation. The courage of the fugitive returns as he nears his own headquarters, while that of the pursuer sinks in proportion to the distance covered in enemy territory. Finally the fugitive turns and attacks the former pursuer vigorously and unexpectedly and, as was predictable, he in turn is beaten and driven away. The whole performance is repeated several times till both fighters come to a standstill at a certain point of balance where they threaten each other without fighting" (p. 36).

Lorenz's comment on time lag in the self-regulating process suggests that he is ascribing the oscillation in social interaction to an attribute of individual organization which is similar to sequential decentering in primitive interpersonal cognition. Moreover, in characterizing this form of social interaction in equilibrium terms, he is also suggesting that interpersonal polarities in their exaggerated fluctuating form serve to correct or balance one another. This possibility receives explicit expression in Bateson's (1958) analysis of

another example of prinitive social interaction, the ritualized naven ceremony of the Iatmul, a tribal people of New Guinea.[4]

Naven interaction essentially takes place between two individuals who have a culturally fixed role-reciprocal relationship, the "laua" and the "wau". The laua, who is the mother's child, is usually younger and ordinarily subordinate to the wau who is the mother's brother. At times, however, the laua behaves in ways which contradict his typical, subordinate role, for example, feats of accomplishment which place him in a competitive relationship with the wau, excessive boasting to the wau, etc. The reactive ritualized response on the part of the wau constitutes the naven ceremony and is characterized by a formalized and exaggerated expression, not of the wau's usual, dominant role, but rather of its reciprocal. Thus, the behavior of the ordinarily dominant wau is directed toward representing extreme weakness and vulnerability. He dresses in filthy tattered skirts, hobbles along in complete decrepitude, and further demonstrates his female vulnerability by falling to the ground and assuming grotesque attitudes with legs widespread. If he can find the laua he will underscore his weakness by rubbing the cleft of his buttocks down the length of his laua's leg. This is said to have the effect of causing the laua to run in search of a gift which will restore the wau to his usual rule, to "make him all right".

Bateson's analysis of the functional significance of the naven ceremony is of direct relevance to the question of whether it makes systematic sense to view exaggerated interpersonal polarities as balancing each other in a manner similar to that which is involved in the primitive structuring of the impersonal event. Bateson solves the problem: If a culturally expected pattern of dominance behavior, such as boasting, evokes a culturally expected complement of

submissive behavior, what is to prevent a spiraling sequence of action and reaction from occurring, that is, one in which each action, in turn, evokes an "escalated" response from the other (complementary schismogenesis)? The same question can be asked in regard to a pattern of culturally expected behavior, such as boasting, which elicits a symmetrical boasting response in the other (symmetrical schismogenesis). Clearly, Bateson points out, if only complementary schismogenesis or symmetrical schismogenesis were involved, the role-relationship would eventually disintegrate. His initial formulation of the solution takes the following form:

"...I made an effort to account for the presumed dynamic equilibrium of the system by pointing out that the symmetrical and complementary processes are in some sense opposites to each other so that the culture containing both of these processes might conceivably balance them one against the other. This, however, was at best an unsatisfactory explanation, since it assumed that two variables, will by coincidence have equal and opposite values" (p. 287).

Bateson then attempts to deal with the problem by using a model from cybernetics in which the stability of the system depends on a built-in self-corrective characteristic in the form of negative feedback. For example, with respect to a governor and steam engine, the relationship between parts is such that the faster the piston moves, the faster the governor spins; the faster the governor spins, the wider the divergence of its weighted arms; and the wider the divergence of the arms, the less the power supply. In such cases, the system is self-corrective by virtue of the fact that the more there is of something, the less there is of something else and vice versa. Under these circumstances, the system either seeks a steady state or oscillates about such steady state.

Using the self-corrective circuit as a conceptual model, Bateson formulates the functional significance of the naven ceremony:

"It was not good enough to say that symmetrical schismogenesis happened by coincidence to balance the complementary. It was now necessary to ask, is there any communicational pathway such that an increase in symmetrical schismogenesis will bring about an increase in the corrective complementary phenomena? Could the system be circular and self-corrective?

The answer was immediately evident. The naven ceremonial, which is an exaggerated caricature of a complementary sexual relationship between wau and laua, is in fact set off by overweening symmetrical behavior. When laua boasts in the presence of wau, the latter has recourse to naven behavior" (p. 289).

Bateson is thus advancing a formulation which is strikingly similar to Lorenz's analysis of primitive self-regulation in social interaction. His concept of schismogenesis, or if you will, the lack of conservation of a role-relationship, implies an isolated and hence uncorrected centering by each participant upon only one role dimension (either symmetrical or complementary). Moreover, the relationship is restored, that is, the inbalance is corrected, by the participant's being able to engage, not only in his usual role, but in an exaggerated expression of its complement as well. Thus, the primitive conservation of the social event would appear to rest upon a particular relationship between complementary roles as represented within self-organization. Bateson's feedback model implies, as does Lorenz's concept of lag, that this relationship between complementary roles is one of isolation and, as such, is formally similar to Piaget's conception of the relationship between schema in the primitive structuring of interpersonal reality. In the one case, isolated interpersonal schemas mediate a cognitive construction which is characterized by

exaggerated and fluctuating polarities of the physical event, while in the other case, the isolated interpersonal schemas mediate a construction which is characterized by exaggerated and fluctuating role dimensions of the interpersonal event.

In an earlier paper (Feffer, 1967), the writer has advanced a similar interpretation in regard to symptom expression. In brief, he has proposed that symptoms, in common with other primitive cognitive constructions, typically evidence an oscillation between exaggerated, antagonistic polarities. The "undoing" of the obsessive-compulsive individual, for example, refers to excessive acts of control, such as extreme orderliness and cleanliness, which fluctuate with intense sexual or destructive impulses. A similar form is present with respect to symptoms of a more obvious interpersonal nature. In the delusion, hostile aspects of self-organization may find extreme expression in an external "persecutor" who interacts sequentially with a complementary aspect of self-organization in the exaggerated form of a "victim". Essentially, then, the previous decentering interpretation of symptom expression has suggested that the interpersonal dimensions of the social event, which in mature self-organization are simultaneously coordinated as the subject and object of experience, are expressed via the symptom as a fluctuating relationship between dynamically isolated and exaggerated aspects of a role and reciprocal.[5] The reader is referred to the extended analysis of symptom expression (Feffer, 1967 pp. 22-25), which in the context of the present formulation, serves to focus directly upon individual organization as well as to broaden the decentering interpretation to include dynamic interpersonal events.

A reformulation of the individual-group relationship

Two propositions have mainly served as the basis for extending Piaget's developmental conceptions to interpersonal behavior. First, that the structuring of reality takes the form of complementary polarities which at certain levels of development are experienced as physical dimensions of the impersonal event and as role dimensions of the interpersonal event. Second, that the relationship between polarities is a determining factor with respect to the conservation of both impersonal and interpersonal events. Essentially, then, the present formulation of interpersonal behavior is an interpretation, in the equilibrium terms of Piaget's framework, of the relationship that obtains between role polarities in the structuring of interpersonal events.

From this viewpoint, isolation between polar dimensions underlies primitive structuring in the interpersonal as well as the impersonal realms. Given such isolation, the distortion inherent in focusing upon a given dimension of the event is either uncorrected, or at the most partially corrected by sequential focusing. In this regard, a consideration of the primitive structuring of impersonal and interpersonal events suggests that the polarities take on exaggerated, antagonistic proportions and, at best, serve to balance each other in a fluctuating manner. Thus, isolation between relevant schemas is considered basic to unstable cognitive organization whether evidenced in naive interaction, the child's fluctuating judgments of quantity, or the delusional personification of aggressor-victim roles into separate, sequentially interacting entities.

It also follows from Piaget's framework that the differentiation of schemas into a pair of related schemas underlies stability of cognitive organization in both impersonal and interpersonal realms. Thus, conservation in the impersonal realm depends upon an intrapsychic representation in which polar dimensions of

the impersonal event are reconciled, as for example, when changes in the height of an object are coordinated with changes in its width. The interpersonal event, on the other hand, is comprised of interacting participants who occupy such roles and reciprocals as giving-taking, asking-answering, and dominating-submitting. The greater complexity notwithstanding, a stable construction of the interpersonal event depends, as in the impersonal realm, upon a reconciliation of these complementary dimensions. In this regard, the cognitive structuring of both impersonal and interpersonal events approaches an ideal equilibrium to the degree that systems of schemas permit a simultaneous reconciliation of polarities in the organization of experience. This conception accordingly suggests that the various role dimensions which in primitive self-organization are experienced as antagonistic polarities, are in mature self-organization simultaneously coordinated and reconciled, as for example, in the modulation of an aggressive impulse by the simultaneous realization of the victim's perspective. This simultaneous, mutual regulation of complementary viewpoints has been variously designated as taking the other's perspective on an intended action, the reciprocal modulation between impulse and control, the "I" in relation to the "me", the self as both subject and object of experience, and on the most formal level, the recapitulation of the whole in the part.

The question can be raised as to the relationship between individual organization as so conceptualized and group structure, particularly in view of the present critique of Asch's formulation of this issue. It should be emphasized in this regard that the foregoing analysis has advanced the position that the processes underlying the construction of the impersonal event (object) take the same form as those underlying the construction of the interpersonal event (group organization). It may be seen, then, that the present formulation

poses the problem of the individual-group relation in much the same way that Piaget formulates the subject-object relation. In its proposition that the individual constructs the interpersonal event in terms of role schemas, the decentering formulation has focused on one aspect of this relation. It has concerned itself primarily with the nature of group structure as a derivative of individual organization or, more precisely, as a derivative of the relationship between role schemas in individual organization. In this regard, the foregoing analysis has suggested that, in certain respects, a formal parallel exists between the characteristics of group organization and the characteristics of the individual unit. Thus, an unstable construction of the log-carrying event in terms of an exclusive focus on only one role would be duplicated by non-conservation on the group level, that is, by a literal disintegration of the log-carrying relationship as, for example, a pulling in opposite directions. Similarly, a sequential focus on different role dimensions within individual organization takes the form, on the group level, of fluctuating social interaction, as in the example provided by Lorenz. At cognitively advanced levels, the stability of organization in each participant is expressed on the group level by the conservation of the social event itself. In the log-carrying event, the essential form of the relationship is maintained or conserved over a wide range of contingencies (as, for example, one of the participants stumbling) by virtue of each individual's cognitive system of schemas whereby all possible role-reciprocal variants of log-carrying behavior can be anticipated.

How does a consideration of the more dynamic role dimensions change this formal picture. Given a pervasive isolation between the roles of giving and taking within self-organization, the individual is faced with a very real con-

servation problem which is evidenced, for example, in how to give without diminishing himself, or how to stop from taking too much. Under these circumstances, the interpersonal (group) relationship can be maintained only under very limited conditions of giving and taking, and accordingly is a fragile one at best. In contrast, the ideal structuring of the interpersonal event in terms of the advanced cognitive operation suggests that the giving-taking relationship is represented on the individual level by a network of schemas within self-organization in terms of which all possible variations of role and reciprocal can be generated and coordinated with one another. Thus, in giving, another aspect of the self simultaneously receives, while in getting, another aspect of the self sacrifices; furthermore, this balance between aspects of the self obtains over various permutations of the giving-taking relationship. Such stability of organization in each participant would be evidenced on the group level by the preservation of the essential form of the relationship under a wide vriety of circumstances. For example, a giving-taking relationship may have ben expressed initially as coquetish dependence and indulgent support under romantic conditions of courtship. Its maintenance under a changed condition of profound illness, however, would depend upon whether the participants could assume such extreme variants of role and reciprocal as complete helplessness and extreme sacrifice.

In other respects, however, the individual-group relation can be viewed as more than a psycho-social parallel of equilibrium characteristics. At primitive levels of social interaction, the individual-group relation can be seen as <u>particular</u> kind of part-whole relationship, one which has the same controlling form of equilibrium as in primitive interpersonal cognition. In Lewin's example, as in the Ehrenhaus illusion, a change in the part alters the relationship between parts and, accordingly, the quality of the whole, viz., such

action of a participant brings the relationship between participants to a new, momentary equilibrium. Accordingly, in the primitive structuring of the interpersonal event, there would seem to be a basic disjunction between individual and group in the sense that the group has an emergent quality which is not reduceable to the properties of the individual unit. In contrast, the individual-group relationship at advanced levels of cognitive organization can be viewed as approaching an ideal equilibrium between individual and group, between part and whole. It is with respect to this particular form of the individual-group relationship that Asch's formulation is seen as completely adequate and clarifying, viz., his conception that the simultaneous dovetailing of complementary responses at the group level is recapitulated as a simultaneous coordination of perspectives within self-organization.

It can be seen, then, that the individual-group relation may take different forms, and that these forms are isomorphic to particular relations between subject and object at different levels of cognitive development. In so delineating these forms of the individual-group relation, the present analysis affords the possibility of reconciling the traditional antagonistic approaches to this issue. Thus, the disjunction between individual and group, as expressed by the notion of the *group mind*, is seen by the decentering formulation as reflecting an isolation between antagonistic role dimensions within primitive individual organization. Similarly, the equating of individual and group in the individualistic thesis is interpreted as the ideal equilibrium involved in the individual's advanced structuring of the interpersonal event. The present formulation, accordingly, suggests that the different forms of the individual-group relation, as characterized by the group mind approach and the individualistic thesis, are essentially a function of different developmental levels of

individual organization in constructing the interpersonal event.

There is, however, a second aspect to the individual-group problem, one that has only been implied in the foregoing analysis. Extending the dialectic of the subject-object relation to the interpersonal sphere suggests the proposition that role schemas, in common with cognitive schemas in general, change as a function of constructing the interpersonal event. Thus, in addition to a focus on group properties as these derive from individual organization, a formulation of the individual-group problem should also deal with the properties of group structure as these, in turn, effect the attributes of the individual unit. With respect to the two basic forms of the individual-group relation which have been delineated, this consideration can be expressed in the following way: How does oscillating social interaction transform the individual unit from one in which the different roles are isolated and antagonistic, to one in which the group is recapitulated as coordinated aspects of self-organization. The implications of Piaget's equilibration model are particularly relevant to this aspect of the individual-group formulation. Although it need hardly be emphasized that such an extension is quite speculative. An extrapolation of the equilibration model to the interpersonal area could suggest that the individual consolidates an interpersonal schema in much the same way that he does an impersonal schema, namely, by applying it to diverse events. Just as the subject may test the limits of a physical perception such as length, so too he may test the limits of a role dimension in social interaction, as for example, in the bullying extreme of the dominant role. And by the same token, just as the malignant polarity of width is encountered when the invariant event is structured in terms of an extreme length dimension, so too may a malignant polarity of the interpersonal event be encountered in the

role of the interacting other as, for example, the fearful victim. If the subject engages in the complementary role as well, in the oscillating form of social interaction, then an inference similar to the one in the impersonal sphere can be drawn, namely, that he is constructing the interpersonal event in terms of isolated, polar role dimensions which are in potential conflict with one another. As with a contradiction between "more" and "less", the individual in constructing the interpersonal event could eventually be faced with the problem of being both aggressor and victim, giver and taker, questioner and informant, at the same time. And as in the conservation of quantity, this conflict could be resolved by a more stable form of equilibrium in which the antagonistic role polarities are coordinated by virtue of taking the role of the other in modulating an intended action. The equilibration model thus provides a basis, although a quite speculative one, for understanding how one form of the individual-group relation may give rise to another. In so doing, it highlights a relationship between individual and group which is formally similar to the dialectic between subject and object: With respect to anything less than Asch's ideal equilibrium, a potential conflict exists between individual and group which takes the form of role antagonisms within individual organization. The reconciliation of such polarities represents, on the one hand, a more stable form of self-organization and, on the other, a more stable equilibrium between individual and group as evidenced in the conservation of the interpersonal event.

These implications of the equilibration model for interpersonal development may serve to further reconcile the insights of the group mind approach and the individualistic thesis. In addition to representing isolated aspects of individual organization, the "group mind" can also be seen as representing potential qualities of self-organization as these are elicited in the form of

the external "other" in the social relationship. Moreover, in equating the characteristics of individual and group, the present formulation would emphasize an implication which is diametrically opposed to the narrow reductionism of the individualistic thesis. Instead of the position that the group represents nothing but that which is in the individual, it would underscore the implications of an ideal relationship between individual and group, namely, that social interaction, having actualized all that was potential within the individual unit, is by that token completely represented within self-organization.

Some empirical correlates

A number of studies have been designed to evaluate selected aspects of this formulation of interpersonal behavior. The first of these (Feffer, 1959), was primarily concerned with providing a measure of self-organization as so conceptualized. To this end, a role-taking task (RTT) was devised in which the individual is asked to make up an initial story to an ambiguous scene, and then to retell the story from the viewpoint of each of his characters. If, for example, the individual has constructed a story about an aggressor and a victim, he is subsequently required to retell the story first from the aggressor's viewpoint, and then from the viewpoint of the victim. Congruent with the decentering formulation, the individual's role-taking has been evaluated in terms of the degree to which he is able to refocus upon his initial story from the particular perspectives of each of his characters while coordinating the different versions of the story. Forms of coordination which are evidenced between the different perspectives have been analyzed in terms of the equilibrium characteristics previously discussed.

Studies by Feffer and Gourevitch (1960) and Candell (1965) were designed to evaluate the developmental significance of this measure of self-organization. Children from six through thirteen years of age were given the RTT and a number of Piagetian conservation and class inclusion tasks. A developmental ordering of role-taking performance in accordance with RTT decentering criteria showed a predicted progression with age, and controlling for the influence of age, predicted relationships with forms of decentering on the impersonal Piagetian tasks. Additional samples of intellectually normal and retarded children (Buchsbaum, 1965; Feffer, 1969) as well as normal adults (Feffer and Jahelka, 1968; Lovenherz and Feffer, 1969) have also been analyzed in terms of the decentering criteria.

Essentially, three main patterns of response have emerged from the analysis of such role-taking productions. The first, typically evidenced at about six years of age, is characterized by uncorrected decentering, that is, by obvious discontinuity between all versions of the story. The subject may describe mother as angry in the initial story and focus on an irrelevant aspect of mother's clothing when asked to retell the story from mother's viewpoint. A second pattern becomes predominant between seven and eight years of age, and is characterized by a limited, fluctuating form of coordination between perspectives. Although each of the perspectives may be relatively consistent with the initial story, they are sequentially focused upon with respect to one another. For example, the content of a previous role ("We're going for a ride") is reacted to by the subject in his subsequent role (That's great, where are we going?"). The third pattern, which only becomes clearly evident at about nine years of age is characterized by a synthesis of the different perpsectives and hence is considered as showing the simulta-

neous coordination indicative of the cognitive operation. For example, an adult subject in the role of one woman described herself from an internal orientation and the other from an external viewpoint: "She feels cheated because she thought that the landlady had agreed not to raise her rent, but then she went ahead and raised it." In taking the role of the other woman, the inner and outer orientations are reversed, but at the same time coordinated "The landlady could see that she was angry, but she had no choice--expenses had gone up."

More recent studies have been concerned with the parallel between the properties of the individual unit and those of the group. Feffer and Suchotliff (1966), for example, paired college students into dyads on the basis of their ability to coordinate perspectives on the RTT. Dyads were then given a "password" communication task in which one person in the role of donor is required to communicate a word via one-word association clues to his partner who does not know the word and who responds with one-word guesses; the donor, in turn, responds with a subsequent clue, etc. It was found that the dyads comprised of the higher RTT performers communicated words more quickly and with fewer clues than did the dyads comprised of lower RTT performers. In a follow-up study, Suchotliff (1969) analyzed the functioning of schizophrenic and normal subjects on both individual cognitive tasks and password interaction. He found that those schizophrenics who structured the individual cognitive task in terms of uncorrected decentering, showed a similar decentering deficit in their password interaction: for example, in focusing on the word to be communicated, they typically lost sight of the other's response to their previous clue.

At this point, little in the way of empirical work can be reported in regard to that aspect of the present formulation dealing with developmental change. Only preliminary studies are in progress[6] and these face a number of difficulties which are involved in the extension of the equilibration model to interpersonal behavior. The final section will touch upon some of these difficulties.

Piaget's approach to social development

Although Piaget has paid less attention to interpersonal content than to impersonal and formal aspects of cognition, he has, nevertheless, considered dynamic and interpersonal material within a developmental framework (Piaget, 1955, 1962a, 1962b). How, then, does the present conceptualization compare with Piaget's own formulations which are, in fact, also concerned with such problems as the individual-group relationship, and development in the interpersonal area?

In one respect, the present formulation is clearly similar to Piaget's and obviously derives from his. This is in regard to the formal parallel between the characteristics of the individual unit and the properties of group organization. Thus, Piaget (1962b) in his analysis of moral judgment has articulated his basic view regarding an isomorphism between the reciprocity of the logical grouping and social cooperation. He also draws a classic parallel (Piaget, 1955) between forms of thinking in children and forms of verbal interaction.

The respective formulations differ, however, with regard to the other aspect of the individual-group relationship, namely, the problem of developmental change. Piaget's position may be seen in his analysis of moral judgment (Piaget, 1962b) and, more specifically, in his account of the child's shift from an "eye for an eye" to a "do as you would be done by" view of justice.

Piaget attributes this change from revenge to forgiveness, not to the child's weakness, but to his realization (as expressed by a ten year old) that "there is no end" to revenge. The underlying dynamic is described in the following:

"Just as in logic, we can see a sort of reaction of the form of the proposition upon its content when the principle of contradiction leads to a simplification and purification of the initial definitions, so in ethics, reciprocity implies a purification of the deeper trend of conduct, guiding it by gradual states to universality itself" (pp. 323-324).

Piaget is thus proposing that the mode of thought which enables the child to engage in the relatively primitive oscillating reaction will, by the same token, also enable him to envision the possibility of infinite counter-reactions. The realization of this transforms the symmetrical "eye for an eye" response to a more stable form of equilibrium inherent in the higher form of reciprocity. Clearly, then, an equilibration process is being posited in the notion of reason purifying itself to an ideal form.

At the same time, Piaget explicitly evokes social interaction as a necessary condition for such development to occur. He suggests that cooperation between the child and his peers brings about a transformation of egocentric thought to the operational grouping, and concomitantly, to advanced notions of morality. Piaget sees this "discussion among equals" as a liberating force which enables the child to stand apart from himself, to take his functioning as an object, and hence to consciously grasp and thus purify the organization already implicit in the form of his response.

It should be noted, however, that in his analysis of interpersonal content in general, Piaget does not provide systematically for structures which, in

form and function, have properties similar to those which he ascribes to the impersonal intellectual schema. The closest that he comes to this is in his notion of the affective schema (Piaget, 1962a) which refers to various feeling states aroused by the subject's interaction with people. The properties of assimilation and accomodation, however, are not explicitly ascribed to affective schemas.[7] Accordingly, in Piaget's analysis of moral judgment, there is no vehicle which mediates the child's construction of the other in social interaction.

Piaget's failure to employ mediating schemas which serve as both a mode of consolidation and source of contradiction in constructing the interpersonal event, places a particular constraint on the way in which he formulates the problem of change in the interpersonal area. His formulation suggests, in effect, that a "disembodied" equilibration process exists which has no apparent mooring in social interaction; that the relationship between equilibration and the social condition for its arousal is essentially one of a psycho-social parallelism. Thus, in his notion of "discussion among equals" as a condition for development, Piaget is positing a form of social interaction which presumes the very cognitive organization it is supposed to elicit.

This difficulty in Piaget's approach to moral development points to the importance of the role schema as providing a necessary link between the individual equilibration process and the group(social interaction) condition for development. In contrast to Piaget's analysis, the present formulation would suggest that the shift in the primitive symmetrical reaction of revenge to a higher level of reciprocity is represented by the reconciliation of antagonistic role polarities in the form of coordinated aspects of self-

organization. It would thus focus precisely upon the child's weakness as representing one of the available ways he has of constructing the interpersonal event, but which at the same time is in potential conflict with his other role as punisher. Moreover, a grasp of infinite counterreactions, rather than being nascently contained in the primitive symmetrical reaction, would be theoretically derived from a cognitive reorganization which resolves the conflict by coordinating the antagonistic perspectives of the "one who punishes" with the "one who is punished." In short, instead of relying upon a dialectic of self-purifying reason as the propelling force in development, the present formulation focuses upon the potential contradictions which are inherent in primitive social interaction and which are resolved by a qualitatively different, more stable form of equilibrium between individual and group.

Some final implications

There are, clearly, many problems which are raised by the present formulation of interpersonal behavior. Some of these derive from difficulties which are involved in Piaget's approach itself as, for example, the ambiguity of the equilibration model concerning the process whereby contradictions are encountered and resolved. Piaget's (1968) probability approach to these questions is neither clear nor convincing. Other problems derive from the extension of Piaget's concepts to the highly charged, dynamic world of interpersonal relationships. The assumption implicit in the extension is that there is an invariance in the interpersonal realm which is analogous to that in the physical realm. There is the obvious possibility, however, that it is precisely the lack of such invariance in the interpersonal area that gives rise to the typically high drive states

involved. Moreover, a number of writers (Schachtel, 1954; White, 1959; Wolff, 1960) have observed that it is essentially in the absence of strong drives that the organism manipulates parameters in exploring new facets of the environment. They have noted further that in the presence of states of physiological arousal and emotional states including anxiety, such exploratory behavior gives way to a narrow form of learning specifically directed toward the reduction of the high drive state. Thus, even were one to accept the equilibration model with respect to a sphere of neutral impersonal objects, one might question its applicability to dynamic interpersonal content. It should be noted, however, that the observations of Schachtel, etc. lend themselves to other interpretations as well. One which is consistent with the present formulation would suggest that exploratory variations of schemas are a necessary condition for "equilibratory" development in both impersonal and interpersonal realms, but that there are a greater number of occasions in the interpersonal world for high levels of arousal to occur. There would thus be a greater likelihood in the interpersonal realm for exploratory behavior to give way to a drive-reducing form of learning which could isolate the individual from the new, potentially contradictory dimensions of experience necessary to further development.[8]

Finally, the prototypes of social interaction which have been presented all involve participants who are developmentally similar to each other. The formulation clearly requires elaboration with respect to interaction between participants who differ in developmental level, as in the parent-child relationship. It may be stating the obvious to suggest that these problems can only become clarified to the extent that the formulation is refined and its implications extended to the various particulars of interpersonal life.

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Footnotes

1
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2
The issue here is not whether the isomorphism concept is tenable, but rather that it suggests Asch's initial tie to a classical gestalt formulation.

3
Presumably one could deal with this type of social interaction as a form of social organization in which the distortion inherent in a single centration is not corrected by sequential decentering. The analysis, however, will concentrate on more advanced forms as typified in the descriptions of Lorenz and Bateson.

4
My appreciation to L. Cirillo for bringing the significance of Bateson's analysis to my attention.

5
A parallel analysis of impersonal symptom expression has also been presented in Feffer (1967).

6
In current doctoral research, for example, training procedures based on a "cognitive conflict" equilibration model are being compared to procedures based on a social reinforcement model with respect to relative effectiveness in inducing developmental change in moral judgments.

7
There is an implication of this only by virtue of an "indissociable" relationship between the affective and intellectual aspects of the schema. Assimilation-accommodation properties are also implicitly attributed to another type of interpersonal schema, that which Piaget refers to as "personal schema" (Piaget, 1962a); this concept, however, is not elaborated.

Footnotes (Cont'd)

8 This interpretation is congruent with Wolff's (1960) formulation and is elaborated with respect to anxiety variables in Lowenherz and Feffer (1969).

Appendix B

Abstract of Progress Report 11-19-68

Significant findings and events: pilot testing of approximately 40 subjects

The aim of the research is the adaptation of the RTT for use with mentally retarded individuals. The pilot testing has had a two-fold purpose within this context: a) to compare different kinds of stimulus material, e.g., three dimensional "wedgie" figures, TAT cards, etc., in regard to which type of material would elicit the most productive initial story and the greatest degree of differentiation between initial story characters, and b) to determine which type of instructions and procedures would be best understood by mentally retarded subjects at various levels of maturity.

a) stimulus material

As compared to the wedgie figures and TAT-like pictures, the MAPS stimulus material appears to stimulate more productive initial stories and greater differentiation between characters. This may be due, in part, to the greater variety of content in the MAPS. On the basis of the subjects' performance thus far, the following scenes and figures of the MAPS have been selected:

Background scenes	Figures
Street scene	Policeman (M-5)
Living Room	Gunman (M-6)
Bedroom	Doctor (M-9)
Nursery	Man with gifts (M-10)
Doctor's examining room	Man arguing (M-11)
Schoolroom	Boy on crutches (M-18)
Empty room	Lady - hands to mouth (F-5)
	Lady - with apron (F-6)
	Elderly lady (F-9)
	Negro man reading (N-3)
	Negro lady (N-4)
	Girl - passively standing (C-1)
	Girl -hands clasped (C-2)
	Boy - back (C-7)
	Boy - fist raised (C-8)

A number of MAPS figures were eliminated before testing because they were considered to be excessively aggressive, sexual, and/or to have a negatively stereotyped racial character. Background scenes were eliminated because they did not stimulate differentiated initial stories, or because they were clearly foreign to the experience of the youngsters tested.

b) instructions and procedures

The major changes in procedure and instructions have been influenced by the limited attention span and comprehension encountered in the first sample of subjects tested. Standard procedure has been to have the subject first produce at least two initial stories (with three characters in each story) and then go back to the first story in taking the roles of all three characters. Because of the relative difficulty evidenced by subjects in staying with the task in this form, we are having the subject take the roles immediately after having produced each story. In addition, although we are continuing to have the subject make up two initial stories with three characters each, we are requiring him to take the roles of only two of his figures in each story, namely, those who most clearly have a role-reciprocal relationship in the initial story. Most subjects have been able to stay with the task when modified in this manner.

The following instructions and procedure seem to be comprehended over the widest mental age range in the present sample:

RTT Instructions

"I want you to make up a good story about this scene (show Living room scene). Tell a story with a beginning, middle, and end. Choose three people for your story (show array of MAPS figures)."

After the first story is completed: Select two figures who in the story are given role-reciprocal relationships (e.g., giving-taking, helping-grateful, dominant-submissive). If there is no differentiation (e.g., father and son are going to a ball game) or no relationship (characters are doing completely unrelated things) between figures, select two figures who occupy societally defined roles and reciprocals (e.g., father-son, boy-girl, but probably not two girls or two boys). Regardless of the basis for choice, pick the figure developed last in the story for the beginning role-taking:

"Now make believe (pretend) that you are the _____ and tell the story again as if you are the _____." (Repeat for second figure.)

"Now I'd like you to tell another story. Pick any scene that you want (indicate the array of MAPS backgrounds). Tell a good story about this scene with a beginning, middle and end. Choose three people for your story (show MAPS figures).

"Now make believe (pretend) that you are the _____ and tell the story again as if you are the_____." (Repeat for second figure.)

Appendix C

Abstract of Progress Report 2-19-69

Significant findings and events: independent sample of 50 subjects

All but two or three of the subjects in the present sample produced scoreable content in completing the revised version of the RTT. Most appeared to enjoy the task as well. Accordingly, we are continuing to use the test in the form described in the last progress report (11-19-68), and have encorporated the procedure in the working manual that accompanies the present report (Appendix D).

It was apparent, however, that the scoring criteria needed revision, particularly at the lower role-taking levels. On the one hand, there was less differentiation between subjects within the 6 through 8 mental age range than there was within the 9 through 12 range. On the other hand, subjects, who clearly differed in their interpretation of the role-taking requirements were being given the same score. Thus, a subject who repeated the initial story in a rote manner, a subject who enlivened his role-taking with dialogue, and a subject who ascribed clear intentions and feeling to the figure whose role he was assuming, were all being scored SR3. Accordingly, the SR category was broken down into three categories so as to provide greater differentiation at this level.

An additional category was established at the PE level as well. It should be noted, however, that the elaboration entry categories are intended to (and, empirically, do) discriminate at the more advanced mental age levels. Thus, the problem of differentiation is less acute at these levels for the present sample of subjects. The new PE category, which requires less coordination between perspectives than the current PE categories, has provided some needed differentiation at the lower end of the elaboration entry categories.

An initial evaluation of the performance of the present sample indicates that the revised scoring criteria do provide greater discrimination and result in role-taking scores which are positively associated with mental age. Additional subjects are being tested in an independent and more rigorous evaluation of this initial finding.

Appendix D

Administering the RTT to mentally retarded subjects

Stimulus material

The RTT is similar to other projective tests in that the subject is initially required to make up stories about ambiguous stimulus material. Material for this initial phase of the RTT has varied depending upon the nature of the study and the maturity of the subjects. Thus, past studies have used stimulus material from Schneidman's Make a Picture Story (MAPS), Murray's Thematic Apperception Test (TAT) as well as TAT-like pictures designed to elicit particular content. In regard to samples of retarded subjects, the MAPS material, as compared to TAT-like pictures and three dimensional "wedgie" figures, appears to stimulate more productive initial stories and greater differentiation between characters. This may be due, in part, to the greater variety of content in the MAPS. The following scenes and figures of the MAPS have been used:

Background scenes	Figures
Street scene	Policeman (M-5)
Living room	Gunman (M-6)
Bedroom	Doctor (M-9)
Nursery	Man with gifts (M-10)
Doctor's examining room	Man arguing (M-11)
Schoolroom	Boy on crutches (M-18)
Empty room	Lady - hands to mouth (F-5)
	Lady - with apron (F-6)
	Elderly lady (F-9)
	Negro man reading (N-3)
	Negro lady (N-4)
	Girl - passively standing (C-1)
	Girl - hands clasped (C-2)
	Boy - back (C-7)
	Boy - fist raised (C-8)

Instructions and procedures

Procedures and instructions are mainly influenced by the limited attention span and comprehension encountered in samples of retarded subjects. Standard procedure with normal adults has been to have the subject first produce at least two initial stories with three figures in each story. He is then asked to go back to the first story in taking the roles of all three figures. Because of the relative difficulty evidenced by retarded subjects (especially children) in staying with the task in this form, we have had the subject take the roles immediately after producing each story. In addition, although we are continuing to have the subject make up two initial stories with three figures each, we require him to take the roles of only two figures in each story, namely, those who most clearly have a role-reciprocal relationship in the initial story. Most subjects have been able to stay with the task when modified in this manner.

The following instructions for the initial story are comprehended over a wide mental age range in samples of retarded subjects (both children and adults):

> "Iwant you to make up a good story about this scene (show Living room scene). Tell a story with a beginning, middle, and end. Choose three people for your story (show array of MAPS figures)".

The next phase of the RTT is the role-taking proper, namely, the retelling of the initial story from the viewpoint of the figures in the initial story. After the first story is completed, select two figures who in the story are given a role-reciprocal relationship (e.g., giving-taking, helping-grateful, dominant-submissive). If there is no differentiation (e.g., father and son are going to a ball game) or no relationship (figures are doing completely unrelated things), select two figures who occupy societally defined roles and reciprocals (e.g., father-son, boy-girl, but probably not two girls or two boys).

Regardless of the basis for choice pick the figure developed last in the initial story for the beginning role-taking.

"Now make believe (pretend) that you are the _____ and tell the story again as if you are the _____." (Repeat for second figure.)

The procedure for the second story is similar, although the subject is given more freedom in making up his story.

"Now I'd like you to tell another story. Pick any scene that you want (indicate the array of MAPS backgrounds). Tell a good story about this scene with a beginning, middle, and end. Choose three people for your story (show MAPS figures)."

"Now make believe (pretend) that you are the _____ and tell the story again as if you are the _____." (Repeat for the second figure).

Scoring terms

Content ascribed to a given figure in the initial story is referred to as an initial entry. Content developed about a given figure when taking the role of that figure is referred to as a self-entry, while content produced about that figure when taking the role of another figure is termed an elaboration-entry.

Scoring rationale

Briefly, the rationale underlying the RTT is based upon an extension of Piaget's decentering concept to interpersonal content. The decentering concept as applied to the RTT suggests that a MAPS figure, as an item of social content, can be described from more than one point of view. The role of the figure which the subject is required to take represents a given viewpoint, while the figures upon which the S focuses when taking the role represent the social objects upon which decentering occurs. RTT performance is evaluated in terms of the degree to which the subject is able to shift from his initial orientation (as represented by his initial story) in refocusing upon the figures from the various roles, while at the same time, maintaining continuity between his

various versions of the initial story. It is assumed that in successful role-taking, the individual is evidencing a type of decentering that is simultaneously coordinated with his previous focus. Conversely, inadequate role-taking can be manifested as either a lack of shift, or a shift which lacks any coordination. These general considerations serve as the basis for the specific categories whereby RTT decentering activity is evaluated.

Dimension of Role-taking Shift

Self-entry	Elaboration-entry
No role-taking (NR)	Character elaboration (CE)
Simple role-taking (SR)	Perspective elaboration (PE)
Role-taking (RT)	

Dimension of Coordination between Perspectives

The relationship between content assigned to the initial entry and to the self and elaboration entries can be classified in terms of degree of consistency. In general the categories are as follows: 1) Basic fragmentation and/or global coherence, e.g., consistency in terms of the general situation, or in terms of a general affective quality, 2) Relative degree of consistency in regard to the major theme, but with minor contradictions and/or irrelevancies, 3) Essential coherence or consistency.

Scoring categories: Self-entry

Content in the self-entry which shows no understanding of the role-taking requirements is scored NR (no role-taking). A primitive or nascent appreciation of the different views is scored SR (Simple role-taking). An RT (role-taking)

score indicates that the subject is clearly taking different perspectives. Content at each role-taking level can be further viewed as to its degree of consistency with the initial story. It should be noted in this regard that when the initial story is basically fragmented, content in the self-entry can only be inconsistent or irrelevant in relation to the initial story.

I NR (no role-taking): Content in the self-entry which indicates that the subject essentially has no understanding that there are different viewpoints upon which to focus. Degree of consistency between self-entry and initial entry at this level of role-taking ranges from basic fragmentation and/or global coherence (NR1) to a relative degree of consistency but with some irrelevancy and contradiction (NR2) to rote repetition regardless of the order of roles taken (NR3). The following are some examples:

Initial story	Story as told by figure
1. NR1 (also CE1):	
This is a school room...he (boy) comes and knocks the school down. All fight. The boy got a black eye.	(man): Pow, the fight. Is bleeding. (latter refers to the boy)
2. NR2	
Man come from work. Lady cleaning up. Girl come from school. She playing. They went shopping	(lady): She cooking. The she clean up Then she do the floor. Then she wash dishes, She make ~~up bed~~. She did the windows. Then she wash the table.

3. NR3 (also CE3)

Mom is home cleaning the house. She goes upstairs to make the beds. The phone rings; the grocery man calls. She orders groceries. She gets 2 quarts milk. Then she hangs up. She goes downstairs. Dads walks in...etc.	(father): Mom is home, goes upstairs makes the beds. The phone rings. Mom orders two bags of groceries, two quarts of milk, then she hangs up. Goes downstairs. Dad walks in...etc.

II SR (simple role-taking): A shift in focus in accordance with the requirements of the role-taking situation, but one that occupies a middle category between no understanding that different viewpoints are involved and one in which there is a clear understanding of this. Such nascent role-taking is usually manifested in some selection and reorganization which are appropriate to the role of the given figure, e.g., the character as the second figure speaks "dialogue" in responding to what the first figure said in his previous role. A beginning appreciation of the role-taking requirements is also evidenced in the appropriate use of personal pronouns ("I" when taking the role of that figure, etc.) but in a rote way, that is, in a mechanical repetition of the initial story regardless of the fact that the roles are presented by the experimenter in a different sequence than given in the initial story. Consistency between the self-entry and the initial entry ranges from global coherence and/or fragmentation (SR1), to a relative degree of consistency with some irrelevancy and contradiction (SR2) to essential coherence and continuity (SR3). Examples follow:

Initial story	Story as told by figure
4. SR1 (also CE1)	
Them are walking and they're taking a walk. They're going into the house. Them are going	(mother): We went to church and we went to the store. We went to see our cousins. The cousins are in the house

Initial story	Story as told by figure
outside shopping. Them are going in the background. Father is going to work. Little girl is going to school. Mother is going to work. Father says to mother "whats the matter?" Lady says "I don't feel well" Father says "you better stay home...Father is yelling at the dog.	

5. SR1

The boy is yelling. Father is mad because there's no room for boy in bed. Lady is crying 'cause someone hit her with a stick. They're going upstairs. They're all ganging up.	(father): little boy you get up in your room. (mother): Father you get up there. Everybody is punished.

6. SR2 (also CE1):

Same as initial story for 4.	(father): He's mad and he won't let the little girl out because "he" (the dog) wasn't good and was yelling at the dog. Father puching lady in the back. Little girl playing with toys.

7. SR2 (also CE2)

This is the father coming home. The mother is surprised that her husband is bringing home a package for her. Boy is running to her. father getting a baseball bat.	(lady): "Hi, Dad, I'm glad that you came home from work. Then the mother says, "Hey son, where are you going." and then the boy says "I'm going out to play with some of my friends, and the mother says "OK"...etc.

8. SR2 (also CE1):

Same as above	(father): The father just came in the door from work and the boy runs past his father without saying hellow or anything. Father says "Hi, son" and the boy didn't answer. Then the boy says, "I hate you father, I'm running away."

9. SR3 (also CE3):

This is classroom. Girl forgot to bring in science report and teacher is hollering at her, telling her to go to office to talk to principal and tell him why she didn't bring report. Lady walks into room and sees him hollering and says maybe she forgot it.

(teacher): This man is hollering at this girl because she didn't bring in her science report and he tells her to go to office. So another lady teacher walks into room and sees him hollering at girl and says maybe she forgot it.

10. SR3 (also CE3):

The little girl is sleeping in the crib. The grandmother is watching the little girl. She has a toy chest in her room. Theres a mirror in her room, a window, The father is coming home from work. He has presents for the little girl. The little girl woke up when she heard her father come in.

(girl): This is a nursery. The little girl is sleeping in her crib. The grandmother came over to watch her. She was glad to see her grandmother. She has a window in her room, a toy chest in her room.

III RT (role-taking): Content in the self-entry which indicates that the subject has a clear understanding that different perspectives are involved in the retelling of the initial story. One indication of this understanding is the subject's emphasis upon the presence of an "inner orientation" of the figure when retelling the story from his viewpoint. Thus, any indication of feelings, attitudes, motives, and intent which distinguished his role from others would suggest the RT score. Under these circumstances, an appropriate change of personal pronouns is not a necessary condition for scoring RT. However, where there is no indication of inner orientation, then the appropriate use and shift of personal pronouns is a necessary condition. A sufficient condition in this case would be a reorganization of initial story content appropriate to that role. If not, then the production would be scored SR. At times, it is difficult to make the differentiation between SR and RT.

The decision at these times rests on how clearly an inner orientation is expressed. Consistency between the self-entry and the initial entry at this level of role-taking ranges from basic fragmentation an/or gloval coherence (RT1), to a relative degree of consistency but with some irrelevancy and contradiction (RT2) to essential coherence and continuity (RT3).

	Initial story	Story as told by figure
RT1:	Care must be taken to distinguish "role-taking" in which the subject is describing what he would do if he were in the situation from role-taking in which the subject assumes the attributes originally ascribed in the initial story. The former would indicate a refocusing on the figure, but without any attempt to coordinate this role with the original one, and, as such, would be scored RT 1.	
11.	This looks like a doctor. Woman comes in the house, then she goes back to bed. Then the boy comes in and says "whose sleeping in his bed. Then comes the other man (Dr.) He looks in the mirror, opens up the clothes and where's his clothes at. He hits the boy in the bed. Lady comes back and tells boy to go to bed. Then the man takes his shoes off. The boy closes the drapes and the lady cuts off the lights.	(boy); He comes in the house and he mad and then he goes. In the morning he gets up and goes to school mad. Then he hits people at school. Then he gets in trouble. Then he comes back home mad. Then he looks in mirror and breaks it.
12.	RT1: The people in the story going across the street to work, after they went to work, they went home on the bus.	(boy): I'm going to the street, to the store. I went into the door and went to work.

The man and the boy went into the house and hanged up their coats and have supper...etc.

13. RT2:

Man, he have a letter. He was speaking to somebody. Man is mad. Boy is walking with the mail.

(boy): If I was a boy I worked for the mail and I'm pretending I'm dead. If I would walk and I'm in traffic, I would be dead. If I looked to see if a car was there I'd run quickly. I would be smashed.

14. RT2:

The boy is running to tell his father and mother something. Then he's running back outside. Maybe he's in a hurry to go someplace. Probably the mother and father wonder where he's going. He could be going anyplace really. He could be meeting his friends someplace. Maybe He's going to school.

(boy): He's running in to tell his mother and father that there was an accident in front of the house and their car was hit. Then he runs back out and watches to see what happens.

15. RT3 (also PE3):

same as above.

(father): He's asking where his son is going. Then he (son) runs out. He's (father) probably wondering where he's going in such a hurry.

16. RT3:

Theres a policeman directing the street and looks like he's (man) coming home to his wife with a present. He (boy) has just broken his leg.

(policeman): I stop all the traffic for people to move from the street and they stop the cars.

Elaboration entry

The scoring criteria in this section are applied to content which is developed about a given figure when taking the role of the reciprocal figure. Elaboration entries would thus indicate that the subject is not only focusing upon the

figure whose role he is taking (self-entry) but also upon another figure from that viewpoint. This would suggest that he is considering more aspects of the situation than is indicated by content in the self-entry alone. As in the self-entry, the content in the elaboration entry can be evaluated with regard to the degree to which there is an understanding that different perspectives are involved. This consideration is reflected in the criteria which differentiate the CE (character elaboration) category from the PE (perspective elaboration) category. The material in the elaboration entry is also evaluated in terms of the degree of consistency and coordination with other perspectives. The criteria for such coordination differ with respect to the CE as compared to PE and will be elaborated when discussing the specific sategories.

IV CE (character elaboration): scored when there is no clear differentiation between an "outer orientation" ascribed to the elaboration entry and an "inner orientation" ascribed to the self-entry. It follows that, since lower levels of the role-taking in the self-entry (NR and SR) do not evidence an inner orientation, any elaboration entries at this level will be CE. However, it does not follow, where there is a clear inner orientation to the self-entry (RT), that the elaboration entry will be PE; the elaboration material may be ambiguous with regard to such an orientation. Under these circumstances the elaboration entry would be scored as CE in conjunction with the self-entry's being scored as RT (RT-CE). At this level of scoring, content is evaluated in terms of the degree of consistency between the elaboration entry and the initial story. Scoring for consistency is based on the same criteria as previously outlined with respect to the self-entry material.

CE1: Examples 1 (elaboration on boy), 4 (elaboration on cousins), 6 (elaboration on girl), and 8 (elaboration on boy).

CE2: Example 7 (elaboration on boy).

CE3: Examples 3 (elaboration on Mom), 9 (elaboration on lady teacher), 10 (elaboration on grandmother).

V. PE (perspective elaboration): in order to score at the PE level, the subject must indicate an appropriate inner-outer orientation in his self and elaboration entries when taking the role of a given figure. That is to say, the self-entry must be inner-oriented and the elaboration entry must be outer-oriented. Thus, a necessary but not sufficient condition for the scoring of PE is the presence of RT (role-taking) at the self-entry. As with the other categories, the subject's productions are also evaluated in regard to his coordination of different perspectives. The criteria, however, are more stringent with respect to the PE category than with the others. Instead of judging degree of consistency between the elaboration entry and the initial story, the judgement is made on the basis of the relationship between the self-entry of a given figure and the elaboration on that same figure given from the reciprocal viewpoint.

The following is a schematic representation of self and elaboration entries. In the criteria that follow, references to the diagram are always from the role of the man.

Initial story	Story from viewpoint of man	Story from viewpoint of woman
Initial entry: man	Self-entry: A	Elaboration entry: C
Initial entry: woman	elaboration entry: B	self-entry: D

Criteria for levels of PE:

PE: 1) an appropriate inner-outer orientation in self (A) and elaboration (B) entries when taking the role of a given figure (man), 2) the self-entry of the reciprocal figure (D) does not have an inner orientation, or 3) there is no correspondence, or at best, a rough correspondence by virtue of belonging to the same gross space-time sphere, between the elaboration entry (B) and the self-entry of the reciprocal figure (D).

PE1: 1) an appropriate inner-outer orientation in self (A) and elaboration (B) entries when taking the role of a given figure (man), 2) the self-entry of the reciprocal figure (D) has an inner orientation, and 3) the elaboration entry (B) is consistent with the self-entry (D) of the reciprocal figure in terms of a specific action.

PE2: 1) an appropriate inner-outer orientation in self (A) and elaboration (B) entries when taking the role of a given figure (man), 2) the self-entry of the reciprocal figure (D) has an inner orientation, 3) the elaboration entry (B) is consistent with the self-entry of the reciprocal figure (D) in terms of a specific action, 4) the self-entry of the reciprocal figure (D) includes a description of an internalized state, and 5) the elaboration entry (B) is not coordinate with the internal state of the reciprocal figure as evidenced in the self-entry (D).

PE3: Criteria 1 through 4 have to be met. In addition: 5) the elaboration entry (B) is coordinate with the internal state of the reciprocal figure as evidenced in its self-entry (D).

PE4: Criteria 1 through 4 have to be met. In addition: 5) the elaboration entry (B) must include a description of the reciprocal figures external

characteristics which exactly reflect that figure's internalized state as evidenced in its self-entry (D).

PE5: Criteria 1 through 4 have to be met. In addition: 5) the elaboration entry (B) must include a conjecture as to the reciprocal figure's actual internalized state as evidenced in its self-entry (D).

Examples: (of the lowest PE category)

Story as told by one figure	Story as told by reciprocal figure
(from role of girl: no self-entry): "I can't pretend I'm the girl- I'm a boy".	(from role of policemen who elaborates upon girl): "I was lost. Then the mother came, and the girl came, and I said, "leave me alone" (Score: RT1-PE)
(from role of father who elaborates on mother and girl): "He's coming home from work and he says: "I'm home" and the mother was listening to him, trying to hear what he's saying, and the little girl is just standing there.	(from the role of mother who elaborates upon girl): "I just cleaned up all the house and your little girl helped me to, so don't mess up in the house and don't eat in the parlor...etc.
(no appropriate inner-outer between self and elaboration entries. Hence, score SR3-CE3 on the basis of relationship to initial story which is not given here.)	(Scored RT1-PE: there is an appropriate inner-outer distinction between mother and girl but the outer emphasis on girl is not picked up elsewhere by a corresponding self-entry on girl. On the other hand, the inner self-entry on mother does not correspond appropriately to the elaboration entry on mother (from father's role) since that elaboration entry does not have an outer orientation, but an inappropriate inner orientation.)

Categories PE1 through PE5: These categories have not changed. Examples are given in Schnall and Feffer, as are the criteria for Change of Perspective.

Appendix E

Distribution of Scores in the Various Coordination Categories (by mental age group)

Mental Age Group	NR[a]			SR			RT			CE			PE				CP
	1	2	3	1	2	3	1	2	3	1	2	3	0	1	2	3	
11.0 - 14.2 (N=19)	0	5	10	5	16	32	21	37	58	0	16	42	47	32	37	10	32
10.0 - 10.9 (N=20)	5	5	10	10	20	30	25	25	70	25	10	30	55	35	20	25	35
9.0 - 9.9 (N=28)	4	0	18	25	50	36	18	36	46	25	39	39	54	29	4	4	18
8.0 - 8.9 (N=14)	21	14	7	43	50	36	21	21	21	36	43	36	29	0	7	7	0
7.0 - 7.9 (N=19)	16	10	5	63	37	16	42	10	10	52	21	21	16	0	0	0	0
6.0 - 6.9 (N=12)	58	8	8	42	25	17	25	8	17	75	17	25	25	0	0	0	0
4.0 - 5.9 (N=11)	55	0	0	55	9	0	55	9	0	45	0	0	0	0	0	0	0

[a] Percentage of S's within each mental age group giving the response. Thus, of the 19 S's in the 11.0 - 14.2 mental age group, 0% gave an NR1 response, 5% an NR 2 response and 10% an NR 3 response.